

LottoMan™ 1.2

LottoMan™
"The Lottery Manager"
Shareware Version 1.22

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NOTICE: The number theory topic is a MUST READ topic. Failure to read this discussion will severely impact your performance with LottoMan. Please take the time to print the topic, pour a cup of coffee and really study what it has to say. In addition, a good understanding of all of the Advanced Understanding topics will let you get the most out of LottoMan and the plays you make..

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Minimum Requirements

LottoMan requires an 80386SX based computer (or higher) running Microsoft Windows version 3.1 (or higher) and at least 2 megabytes of memory. A mouse or other pointing device is also required. For best performance, Lighthouse Engineering recommends the use of an 80386DX or higher system with 4 megabytes of memory and a math coprocessor. A color monitor is also highly recommended.

Introduction To LottoMan

Welcome to LottoMan. This program is intended to assist the lottery enthusiast in maintaining a history of winning plays and user plays. LottoMan also performs several different types of analysis on past winning plays in order to assist you in picking your numbers for the upcoming draws. While we have made every effort to make this program as useful as possible, we can not guarantee that you will win with it. The odds in most lotteries are extremely high. Our goal is to make your odds better than that of the average player who is guessing at the next draw - whether or not we have achieved that goal remains to be seen and Lighthouse Engineering does not claim to have done so. The best we can do is to provide you with many views of the lottery and leave it to you to make the best choices you can. How well you do depends entirely on you and we do not imply anything to the contrary.

Legalese aside, this program is intended for entertainment use only. It is our hope that through LottoMan, you will find playing the lottery more enjoyable and interesting, and hopefully you will gain a better understanding of how lotteries behave. We wish you the best of luck and will be simply tickled to death if you find yourself winning more with LottoMan. If you hit the big one, don't forget our address! You are encouraged to contact the author via CompuServe and let us know how you're doing, what you think of LottoMan and to offer any suggestions for improvements we might make.

A word about our experience with LottoMan

Any lottery picking program has a tough road to hoe if you expect it to consistently produce winning numbers. The laws governing random events are quite clear - you can not predict (beyond a certain probability) what the next event will be. Therefore, it is important that you understand that a lottery picking program is nothing more than a tool to aid you in analyzing the probabilities for the game you are playing and, thereby, to make more intelligent choices in the plays you make in that lottery. With that understanding in hand and a good analysis tool, you can improve your odds of winning a lottery by applying a little statistics to the problem. While the odds will remain very high against a win, a little thought and good analysis of the actual probabilities of the lottery (empirical versus theoretical probabilities) should, hopefully, make your chances of winning greater than if you were to bet based on random picks or the theoretical probabilities.

Each player will develop their own "system" for playing the lottery. In ours, we select the five numbers we like best for each pick and generate a group of random plays from those numbers. From this list, we choose the five we like best and bet those five.

Prior to having written LottoMan, our experience with the lottery was dismal at best. We used computer generated random picks, favorite numbers, birthdates, lucky numbers, all the standard drill. More often than not, we only got one or two winning numbers out of all we played. Further, prior to developing LottoMan we had *never* had three or more numbers in a Lotto play.

In our experience with the Virginia Lotto, we have consistently found ourselves playing four or more of the winning numbers using LottoMan. In fact, at the time of this writing, it has been quite a while since we played less than four of the winning numbers. The stumbling block has been getting all of the numbers together in the same play. We do, however, fairly routinely hit three numbers in the same play. We attribute our improved performance in the game to an improved understanding of the game and how numbers behave within the game through the development and use of LottoMan.

As of the time of this writing, the Self Test included with LottoMan reveals that using Delta/Trend analysis, an upper limit of 75, lower limit of 40 and 305 plays in the analysis has produced all six winning numbers within the list of suggested numbers in the Virginia Lotto 50% of the time over the past year. Further, four or more of the winning numbers are in the suggested list in

over 90% of the draws. Using these parameters, the average number of suggestions in the list is generally between 20 and 30 of the 44 numbers used in Lotto. With this in mind, the odds of our getting all six numbers in a single play have run between 1 in 38,760 and 1 in 593,775 in one out of two games. Given the Lotto's odds of 1 in 7.1 million, that represents between 12 and 183 times better odds of winning for those draws.

Further, we find that using similar parameters, the program has placed the six winning numbers in order in their respective picks in two to three percent of the draws and in separate picks (in the wrong order) in roughly 10% of the draws over the last year. (Since Lotto is not order dependent, that does not detract from our ability to win with those suggestions) With the suggested lists for a pick typically between five and fifteen numbers, one out of ten games have offered odds of selecting the correct six numbers as high as 1 in 15,625 (454 times better than the lottery itself).

We hasten to add, however, that past performance does not mean that we will continue to do so well. Only time will tell. (For a detailed discussion of our system, see the topics on [Number Theory](#), [Using The Self Test](#) and Picking Your Numbers)

For us, at least, we find LottoMan to be one of the most useful tools we have encountered for playing the lottery. It is our sincere hope that you, too, will find it useful. At the risk of drilling the point into the ground, however, we do want to be clear that we understand lotteries to be random events and accept the conventional wisdom of random number theory. Accordingly, this program is intended only for your entertainment and we do not make any claims to its usefulness for predicting winning numbers, express or implied, as a result of the laws regarding random numbers and probability. Any representations made are with respect to past performance and have no meaning what-so-ever with respect to future performance..

BEWARE of any lottery program which claims it *will* win for you. The odds are that you are being led down a primrose path and the person(s) making the claim are trusting you will have spent your money before you find out otherwise.

Getting Started

Every effort has been made to make LottoMan as easy to use as possible. In this section we will introduce you to installing the program on your computer, running the tutorial, accessing or creating your game files and a general discussion of maintaining the files and interpreting the analysis so you can make your plays. For more detailed information about any of these topics, you'll need to refer to the correct sections in this help file. The instructions that follow assume that you already have at least a passing knowledge of how to use Microsoft Windows. If you are not sure of a step, refer to your Windows manuals or feel free to ask for help via CompuServe or our voice line.

Related Topics

[Installing LottoMan](#)

[Accessing Data Files](#)

[Creating Data Files](#)

[Maintaining A History Of Winning Plays](#)

[Maintaining A History Of User Plays](#)

[Editing The Tables](#)

[Historical Analysis Of Winning Plays](#)

[Control Limits](#)

[Internal Self Testing](#)

[Wheeling Numbers](#)

Installing LottoMan

Unpacking the distribution files

If you've downloaded LottoMan from a bulletin board you should have three files which represent the three diskettes on which it normally is distributed: LTTMN10A.ZIP, LTTMN10B.ZIP and LTTMN10C.ZIP. To install the program, you will first have to unpack these three files using PKZIP 2.04G (or higher) which can be downloaded from nearly any bulletin board. If, on the other hand, you've received your copy of LottoMan on diskette, you can skip this step and go directly to the program installation step below.

- 1 Locate the MS-DOS Prompt icon in your program manager groups and double click on it to run a DOS shell. You should see a prompt similar to this C:\WINDOWS
- 2 Create a temporary directory on your hard disk by typing the command MD \TINSTALL and press <enter>
- 3 Move to the temporary directory by typing CD \TINSTALL and press <enter>
- 4 Unpack the download files by using a command similar to the following PKUNZIP \DOWNLOAD\LTTMN*.ZIP and press <enter>. In this case the \DOWNLOAD directory would be the directory that you downloaded the LottoMan program into. If, for example, you are using CompuServe's WINCim program, the download directory would probably be \CSERVE\DOWNLOAD and you would type PKUNZIP \CSERVE\DOWNLOAD\LTTMN10*.ZIP <enter>

PKWare's ZIP program will now extract all the files contained in the download archives into your temporary directory.

- 5 Switch back to your Windows program manager by pressing Ctrl-Esc (press and hold the Ctrl key, press the Esc key then release both keys. Windows will display a list of the programs you have running. Use the up and down arrow keys on your keyboard to move the highlight to the line that says Program Manager and press <enter>

Program installation

Before you can use LottoMan, you will have to properly install it on your hard drive. LottoMan requires roughly 2,600,000 bytes of available disk space to be installed. For the most part, the installation is completely self driven and requires little from you. The steps below outline the installation process.

- 1 If you are installing LottoMan from floppy disk, place the disk labeled Install Disk 1 of 3 in your disk drive (most likely drive A)
- 2 Select the File menu option in the program manager by clicking on the word file or press Alt-F. From this menu, select the Run option by clicking on the Word run or pressing R.

Windows will display a dialog box asking for the name of the program you want to run.

- 3 If you are installing LottoMan from floppy disk type A:\SETUP and press <enter> (If the installation disk is in a different drive than drive A:, substitute the correct drive letter for the A:).

If you are installing from a temporary directory on your hard disk, type C:\TINSTALL\SETUP and press <enter> (If your temporary directory was on a drive other than drive C, substitute the correct drive letter for the C:)

- 4 The installation program should now load and display the readme.txt file which is shipped with LottoMan. This file contains any last minute information about the program as well as information about the installation set. Take a moment to read the file and click on Continue when you are done.
- 5 The setup program will now display a dialog asking for the name of the directory you want to install the LottoMan program into and the installation method to use. By default, the installation directory will be C:\LOTTOMAN. If you would prefer to install the program into a different drive or directory, type in the path you want to use. Do NOT press <enter>.
- 6 Click on the option that says Do not overwrite existing files that are newer. This ensures that all of the LottoMan files you need will be installed but any files you already have which are more current than the ones in the distribution set will not be overwritten with an older file.
- 7 When you are ready to begin the installation, click on the Continue button. You can, of course, quit the installation at any time by clicking on the Cancel button.

Setup will now begin copying the LottoMan files onto your hard drive. If you are installing from floppy disk, you will be asked to insert disk 2 of 3 and disk 3 of 3 as the installation progresses. Each time you are prompted, remove the diskette currently in the drive, insert the diskette that you are being asked to use and click on the OK button.

- 8 Once all of the program files have been properly installed on your hard drive, the setup program will create a LHE program group in program manager and add icons for running the LottoMan program, accessing LottoMan's help and for reading the readme.txt file that setup showed you previously.

You are now done with the installation and ready to start using LottoMan. We suggest you now take a moment to run the LottoMan Help and read the topics on number theory, using the self test, using the vector analysis and picking your numbers. This will help you get the most out of the program.

If you are installing LottoMan from floppy disk, you should remove the last diskette from your disk drive and store your disks in a safe place. If, on the other hand, you are installing from a temporary directory on your hard drive, you should continue with the installation cleanup topic below.

Installation cleanup

If you've installed your copy of LottoMan from a temporary directory on your hard drive, there are duplicate copies of the program files in this directory which are wasting disk space. These files need to be deleted. To do so, follow the steps below...

- 1 Switch back to the MS-DOS prompt by pressing Ctrl-Esc, again, to get the list of Windows programs you saw before. Use the up or down arrow keys on your keyboard to move the highlight to the line that says MS-DOS Prompt and press <enter>.

Windows will bring the MS-DOS shell window back to the top. You should still see a prompt

something like C:\TINSTALL>.

- 2 Type in the command DEL \TINSTALL*. * and press <enter>. MS-DOS will display a message telling you that all files in the directory will be deleted and asking if you are sure you want to do this. Assuming you've typed in the command as shown above, press Y. If you aren't sure, press N and make sure you do have the right temporary directory.

MS-DOS will delete all of the installation files and return you to the DOS prompt.

- 3 Type in the command CD \ and press <enter> to move back to the root directory on your hard drive.
- 4 Type in the command RD \TINSTALL and press <enter> to delete the temporary directory we created.
- 5 Type in the command EXIT and press <enter> to close the MS-DOS Shell window and return to Windows.

The installation cleanup is now complete and everything should be back to the way it was when you started with the exception of the fact that we now have LottoMan installed. You might want to consider copying the download files (LTTMN10*.ZIP) to floppy disk to save them in case you every need to install the program again and then delete these files from your download directory. The download files occupy about 1.5 meg on your hard drive.

Accessing Data Files

The happiest of worlds is finding that the data file you need for your state, or the lottery games you play, already exists. In this case you have only to open the file and select the game you want to play from it. Of course, the same holds true once you have created a data file if the program did not come with the data you needed.

To open an existing data file, select the File/Open option from the main menu. A dialog will be displayed which lists the directories and files on the current disk drive. If the program has been properly installed and you have not already changed directories, the LottoMan directory will already be open and the program's data files listed on the left side of the dialog. If you are not in the correct directory or on the correct drive, use the directory and drive lists on the right side to move to the correct location or type in the correct drive and directory path in the edit box and press Enter or click the OK button. You may now type in the name of the correct file, or press tab until the list of file names is highlighted and use the up and down arrow keys to select a file. Press the space bar and click OK, or use the left mouse button to double click on the correct file name. Should you change your mind about opening a file, click on Cancel.

After you have opened the file, the program will search it for a list of the games it contains. If there is only one game in the file, the program will load it without further ado and you're done. Otherwise, the program will show you a list of the names of all of the games in the file. Use the up and down arrow keys to highlight the game you want to use and press the spacebar to select it, then click OK, or double click on the correct game, and the program will load the selected game.

Creating Data Files

In the event you need to create a data file for your state or for some other purpose, you will have to start from scratch. Let's start by covering how LottoMan files are organized. Each data file contains one or more lottery games, their data and your plays in each of these games, as well as the indexes for all of this data. In this way we avoid the clutter of files that normally surround such programs. (On the other hand, you must be careful not to damage the files) It is our practice to create a single data file for each state's lotteries and to define each different lottery that state runs within the same database as individual games. You may, of course, put each lottery in a separate file if you prefer.

It is important to point out the difference between creating a new file and creating a new game. These are two separate actions. The first creates the file itself and the first game in that file. The latter adds a new game to an existing file. Therefore, if you are looking to add a new game to an existing file, you should use the Game/New option, not File/New.

To create a new lottery database, from scratch, select the File/New option from the main menu using your mouse or press Alt-F followed by N. This displays a New File Settings dialog which defines the first game in the file. Here you enter the name of the game (not the file), the first and last number for each pick (i.e. Lotto uses the numbers from 1 to 44 and Pick 3 uses the numbers from 0 to 9), how numbers are used (Pick 3 uses the numbers for each pick while Lotto uses its numbers once per play), how many digits (picks) are in a play (Lotto uses six picks, Pick 3 uses three), the number of bonus digits if any, and the days of the week on which the lottery is drawn (For more information on these options and how to set them, see the Game Options topic).

Once you have set the options for the first game, click on the OK button and LottoMan will display the main data view window. If you change your mind and choose to quit without creating a new file, you can click the Cancel button while the New File Settings dialog is being displayed. If you have already clicked OK, select File/Close from the main menu. A dialog will be displayed giving you the option to save the new game, not save it or cancel. Click No and the new game will be discarded.

Assuming, however, that you do want to keep the new game, you can at any time select the File/Save or File/Save As option from the main menu... this will display the Save File dialog which permits you to choose a directory and filename for your file. Should you forget to save the file and select the File/Close or File/Exit options from the main menu, a dialog will appear to give you the option of saving the file before you continue. Click Yes to save it if you desire, you may click Cancel to return to the game, or click No to close the file or exit the program without saving the new game. NOTE: Once you have verified you do not want to save the new game, there is no going back. (For a step by step discussion of creating a new lottery file, see the File/New topic)

Maintaining A History Of Winning Plays

One of the most important functions LottoMan provides is that of keeping a history of numbers that have won in the past. It is this history that is used to perform our analysis and, hopefully, suggest good numbers for the next draw. The only practical limit to how many past plays may be kept by the program is the size of your hard drive and how much free memory is available to the program. In the event you begin to have problems loading a game, try making more memory available to the program or removing some of the oldest plays. For what it is worth, a play record requires 28 bytes of memory to load, therefore, you need roughly one meg of memory available to load 36,500 plays. That being the case, unless you have a large number of programs running or very little memory in your computer, you should never have a problem loading a database.

The program displays the past winning plays in a table on the left side of the data view window. The listing includes the date of the draw and the numbers drawn along with an index number for that play. For those who are familiar with spreadsheets, this table should look quite familiar. Menu options and shortcuts are provided for inserting new plays into the table, deleting plays from the table and editing data already in the table. This can be done by clicking the Insert, Edit and Delete buttons at the bottom of the table or selection the correct option from the main menu's Edit option at the top of the screen (For more information on using these options, see the Table Editing topic).

This table also allows you to specify which past plays to use when performing analysis of the data. Along the left edge of the table is a button for each play. If you click on one of these buttons and hold the mouse button down, then move the mouse up and down, you will see a group of plays highlighted. The highlighted plays will then be analyzed and all others ignored when you click the Recalculate button, press F5 or select the Edit/Recalculate option in the main menu. If no plays are highlighted then all plays are used for analysis. To deselect a group of plays, just click anywhere inside the table.

Generally, the more historical data in the game, the more accurate the analysis will be (though this is not always true). Most of the methods do require a minimum of twenty (20) past winning plays and it is best to use a few hundred. The self test is provided to determine the best way to view the historical data. It is important to remember that what comes out of the program is only as good as what goes in. Take your time and be careful when entering historical data into the program... make sure the numbers are right and be complete - do not skip draws if you can help it! The program relies on the relationships between numbers to make its suggestions for good numbers to play... if the data it is looking at is wrong, the results are likely to be less accurate as well.

Maintaining A History Of User Plays

Another of the services LottoMan performs is to keep track of the numbers you have played in the past. The same table used to display the historical data is used to display your plays. Switching between the two lists is done by clicking the View Picks or View History button at the bottom of the table or selecting either the View/Play History (F7) or View/Your Plays (F8) options from the View menu.

The program will automatically enter plays into the list for you if you use the number wheel, or you can maintain this list in the same manner you maintain the historical data list using the Insert, Edit and Delete buttons or menu options. Further, the program is constantly checking your plays against the winning plays to see if there are entries for both on the same draw date and marking the user picks that match winning picks. In this way, you can see at a glance how your plays have done. No need to wade through a pile of tickets, squinting, to compare the numbers on the tickets to the numbers you scribbled down on the back of a junk mail envelope.

Table Editing

Winning Numbers										
	Date	P1	P2	P3	P4	P5	P6	B1	B2	↑
411	07/02/1994	09	18	24	31	32	36			
412	07/06/1994	02	16	18	19	28	34			
413	07/09/1994	03	13	16	32	33	36			
414	07/13/1994	02	23	28	39	40	42			
415	07/16/1994	06	09	12	14	15	26			
416	07/20/1994	05	06	18	28	30	40			
417	07/23/1994	07	14	25	26	28	34			
418	07/27/1994	06	08	11	23	32	38			
419	07/30/1994	09	20	22	29	39	42			
420	08/03/1994	01	06	16	20	25	27			
421	08/06/1994	02	03	13	24	33	44			
422	08/10/1994	09	15	20	24	37	40			
423	08/13/1994	04	18	21	22	37	42			
424	08/17/1994	10	28	31	40	42	44			
425	08/20/1994	10	21	23	26	31	37			
426	08/24/1994	11	12	17	31	37	40			
427	08/27/1994	07	13	16	21	23	33			
428	08/31/1994	09	15	21	22	24	44			
429	09/03/1994	02	03	04	15	36	38			
430	09/07/1994	03	08	19	24	33	42			
431	09/10/1994	13	14	21	23	32	40			
432	09/14/1994	06	12	15	18	30	35			
433	09/17/1994	13	24	25	28	32	41			
434	09/21/1994	08	10	12	28	33	43			
435	09/24/1994	16	24	27	38	40	44			↓

The data tables are nothing more than a list of the records that have been stored in your database for the game you have selected. They appear in order from top to bottom from the oldest play date to the most recent play date. On the left edge of the table is an index, or ID, number that has been assigned to the record. In computer terms its just an easy way to refer to a record. It also allows you, as the user, to relate the play records on the left with the historical data graph on the right when that option is enabled. Next to the index number is the play date for the record. This is either the date on which the winning play was drawn or the date that the user play was used. From there to the right edge of the table are the individual winning picks or user picks.

In the case of a game like Virginia's Lotto, which does not care about the order in which the numbers are drawn, the numbers will always be sorted in order from lowest to highest. Thus the smallest number drawn will be the first pick and the largest number drawn will be the last pick. For games in which the order is important, such as the daily pick three type games, the first pick is the first number drawn and the last pick is the last number drawn. The picks are listed in order from the first to the last from left to right.

NOTE: Regardless of whether or not the game is ordered, bonus numbers are never sorted. Thus, if you are playing a powerball, or magic number game, you should use one of the bonus picks to track the "special" numbers. If, for example, the game you are playing uses six picks with one of those being a power ball, you would define the game as having five picks and one bonus pick. You would then enter plays as the five normal picks and enter the power ball number in the column for Bonus 1.

At the end of the list of picks are spaces for two bonus numbers. If your lottery uses bonus draws, you can use these columns for the bonus numbers. For what it is worth, bonus numbers are not treated any differently than the normal picks except that they are not sorted in with the normal picks. The term "bonus" is only used to differentiate one from the other for the sake of viewing the numbers. Thus, if your lottery uses seven numbers in a normal draw, there is no reason why you can

not use a bonus number for the seventh pick.

A sample data table is shown below. As stated before, for those who are familiar with spreadsheets, this table should also be familiar. The table shown is the one that displays the history of winning plays. Another table in the exact same location is used to display the user plays (or, in other words, your plays). In this topic we cover the general use of the table, adding records, deleting records and changing records. However, detailed description of the editing itself is left to the specific topics related to each operation. For detail on those operations, see the related topics in Edit/Insert, Edit/Edit and Edit/Delete.

Except for the most unusual circumstances, there will be far more play records in the database than can be shown on your screen at one time. For this reason there are several means available for moving around in the table. However, there is nothing "hidden" on the left or right sides of the table so there is no need to try and scroll left or right in the table.

The easiest way to move up and down in the table is to use the scroll bar to move the contents of the table up and down. To do this you can click on the two buttons on either end of the scroll bar and the table will move one line up or down. You can also click on the bar between the two end buttons and the table will move a whole page up or down (if you click on the bar under the blank button in the middle, the bottom line in the table will become the top line, otherwise the top line will become the bottom line). You can also click on the middle button and move it up and down, then let go of the mouse button and the table will be updated to show the plays that are in that relative location in the table.

Another way to move about the table is to click anywhere inside the table and then use the keyboard to move around the table. Here you can use the up and down arrow buttons to move up and down one line, page up and page down to move up and down a full page at a time, ctrl-end to move to the very end of the table or ctrl-home to move to the first play in the table.

While the Winning Numbers table (shown below) is visible, you also use the table to control which data records are used in performing the numerical analysis. If you look at the example table below, you'll note that some of the records depressed while others appear raised. Any record which appears to be depressed will be analyzed when you click on the recalculate button or select Edit/Recalculate. If no records are "selected" then every record in the table will be used. If there are records selected and you want to recalculate using all records, just click inside the table and the selected records will be "deselected".

There are three ways you can go about selecting a group of records. First, you can click on the ID button on the left edge of the table (the ones that have the record ID number in them like 387, 388, etc.) for the first or last record you want to use and hold the mouse button down. Now move the mouse up or down and you'll see the buttons under the mouse being depressed. When you get to the first or last record you want used (the other end of the group of records) let go of the mouse button. Now click on recalculate and LottoMan will update the confidence index for each number according to the records you have selected.

The second way to select records is to click on the first or last record you want to use and let go of the mouse button. Press the spacebar and the record will appear depressed. Now hold down the shift key and use the up and down arrows, page up and page down, ctrl-home or ctrl-end to move the end of the selection to the other end of the group you want to use. When you get to the other end and have all the records you want to select highlighted, let go of the shift key. Now you can click recalculate as before.

Aside from selecting the records to be used in the numerical analysis, the tables also provide your portal into adding history to the database, changing history or removing records from the database. However, it should be pointed out that you do not enter your data directly into the table.

Rather, after selecting the insert, delete or edit options, a dialog is used to accept and validate the data your are entering or to verify which records you want to delete.

Insert

Of all the operations in maintaining your database, adding new records is the most straight forward. To add a play to the database, click on the Insert button (shown here) or select the Edit/Insert menu option. The standard input dialog is displayed in which you can enter the play date and the individual picks. When you have finished entering the new record, click on OK and LottoMan will add the number to the table. You do not have to specify where the number should be inserted into the table; LottoMan uses the play date to find the right position in the table for the new record.

Edit

Editing is nearly identical to inserting new records. The only difference here is that you are not adding a new record to the table, rather, you are changing the contents of an existing record. In order to edit one or more records, you first have to tell LottoMan which records you want to change. This is done in exactly the same way as described for selecting records to be used in the numerical analysis. Use the mouse to select one or more records or use the keyboard as described above. Once you've selected the records to be edited, click on the Edit button or use the Edit/Edit option. LottoMan will fill the data entry dialog with the values in the first record you selected and display the dialog. You can then make whatever changes you need to make and click OK when you are done. Just as in adding a new record, LottoMan will then use the play date (which you might have changed) to figure out the correct place to put the altered record. If you selected more than one record, LottoMan will automatically refill the dialog with the values in the next record and you can repeat the process.

Delete

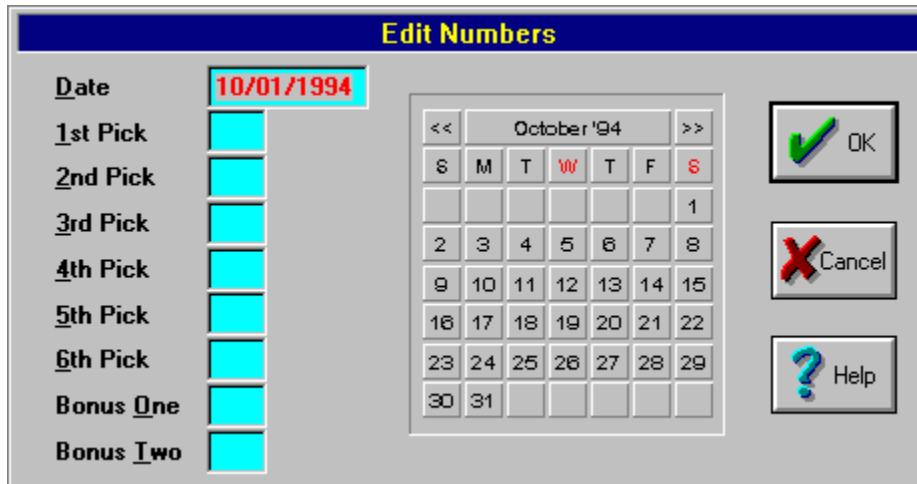
The final table operation is removing records from the table. As in editing records, you first have to specify which records you want to delete. Use the mouse or the keyboard to select one or more records to be deleted. Once you've selected your records, click on the Delete button or use the Edit/Delete option. LottoMan will display a dialog filled with the values in the first record to be deleted in order for you to verify that this is, in fact, the record you want to delete. If you respond Yes, the record is removed from the table. If you respond No, LottoMan will put the record back where it came from. In either case, if you selected more than one record, LottoMan will then display the dialog, again, filled with the values in the next record. Alternatively, if you like living on the edge, you can click the All button and LottoMan will delete all of the selected records without asking you to verify each one. In most case you will only use the delete option with the table of your plays.

Editing And Inserting Numbers

Editing and Inserting Numbers

After selecting the Edit or Insert option, the program will display the Edit Numbers dialog displayed below. Through this dialog you can enter new plays to the current list (winning plays or user plays) or make changes to plays that are already in the current list. For detail of each part of the dialog, click on the area of interest in the copy below or select from the list of topics. The following is a step by step description of entering a play into the dialog.

Entering play data - by the numbers



- 1 If you want to edit existing plays, you must first select one or more plays to edit then select the Edit/Edit option. (For more information on selecting plays, see the Edit/Select topic) To add new plays to the list, select the Edit/Insert option.
- 2 Verify the date being displayed is correct. If not, select the correct date from the calendar provided or enter the correct date by hand. Do not press Enter after entering the date, rather, press Tab to move to the first pick field.
- 3 For each pick in the lottery, enter the correct number for the pick then press Tab to move to the next pick.

NOTE: Your entries in these field must be valid numbers for the lottery. That is they can not be empty and they must be within the range specified for the first and last number. Lotteries that do not repeat digits for each pick do not have to be entered in any particular order. Other lotteries (such as Daily or Pick 3) must be entered in the order in which they were drawn.

- 4 Verify the data you have entered is correct and that all fields have been filled out. If not, make any required changes according to the steps above.
- 5 Click on OK, press Enter or press Tab until the OK button is selected and press Enter. The program will add the play as it now appears to the current list.

NOTE: You can cancel the edit operation at any time by clicking on Cancel, pressing Escape (Esc on your keyboard) or pressing Tab until the Cancel button is selected and pressing Enter. If you are adding new plays to the list or there are no more plays to be edited, the program will return to the main data view. If more plays remain to be edited the program will load the next play... return to step 2.

- 6 If you are editing a group of plays and there are more plays to be edited, the program will load the next play in the list... return to step 2 above. If this was the last play in the edit list, the

program will return to the main data view.

If you are entering new plays into the list and you have more plays to enter, return to step 2 above. If you are done entering plays, click on Cancel, press Escape or press Tab until the Cancel button is selected and press Enter. The program will return to the main data view.

Historical Analysis Of Winning Plays

Keeping the books is nice, but the bottom line is winning. That is, after all, the only good reason for playing the lottery. To that end, LottoMan was born and you have chosen to use it. Most every lottery offers odds that are far greater than the average winnings so the state can make money. The typical Pick 3 lottery offers odds of 1 in 1000 while paying less than half that amount to a winner. The best you can realistically expect to do in the long run, under those conditions, is win half of what you spend. So how do you get ahead?

The trick is to improve the odds of playing the right numbers. Lotteries are a game of statistics. While in a perfect world the odds of heads on the flip of a coin is 50/50, in the real world the odds may not be even... perhaps it is 40/60 because the coin is bent or some other factor. If we sit and watch the coin get flipped for a while and keep track of the results, we might learn that there is an advantage to betting on one result or the other. Having learned this fact, we can hope to do better than the average passer-by who is expecting the odds to be 50/50. When it comes to lotteries, it is more important than ever to know what the lottery is doing... with odds like 1 in 7.1 million, any edge at all is important.

LottoMan currently offers four different methods of analyzing what the lottery has done in the past in the hopes of gaining an edge. The methods are referred to as Aging, Delta, Frequency and Trend. (Other methods are currently being explored and tested) Further, you can combine these methods which results in a total of 16 different ways to look at the past history of the lottery.

LottoMan takes a different view of lotteries than most programs you will encounter. Rather than look at the play as a unit, it looks at each pick individually. In the case of a game like Pick 3, we examine the series of numbers for the first pick and make our selections from that analysis, then we examine the second pick and finally the third. What we suggest for the first pick is entirely independent of the other picks. In this way, we hope to improve the odds of getting the first digit right from 1 in 10 to some higher value like 1 in 8, and so on for the remaining picks. When you accumulate the improved odds for each pick, you arrive at much better odds for the game overall (See the Number Theory topic for a more in depth discussion of the methods and the theory behind the analysis).

Having examined all the past data, the program ranks each possible number (assigns a confidence index to the number) for each pick and displays a numerical analysis graph showing their rankings. Which rankings are to be used in picking numbers is defined by the calculation methods you select and a pair of control limits for each pick. These limits define a maximum rank and a minimum rank to be used in suggesting the plays to make. This allows us to eliminate the oddball numbers from the list. If we can find the range and set of methods that is most often correct for a given pick, we can eliminate a large portion of the possible numbers for that pick and, thus, arrive at those better odds we are looking for. For example, in the case of Lotto, if we can reduce the list of possible numbers for each pick from 44 to 5 and get all six right 10% of the time, we can reduce the odds from 1 in 7.1 million to 1 in 15625 in one out of every ten games. Still not perfect but a serious improvement. (See the Picking Your Numbers topic for more information on using the suggested picks to make your plays).

One last comment with respect to the historical analysis. There is enough math going on behind the scenes to do some serious damage to a box full of pencils or the keys on your average calculator. While every effort has been made to make the analysis go quickly, it can take a minute or so on a slower machine. We've done most of the work in integer math to make things speedy, but there is an equal amount that must use decimals... a math coprocessor and a healthy clock rate will go a long ways to making this program less sluggish. On a 386DX/40 with a coprocessor, recalculating takes less than a second while a 386SX/33 without the coprocessor will run much longer. Aside from the expense of adding a coprocessor, you can keep recalculating to a minimum by getting to know what works best for your lottery early in the game.

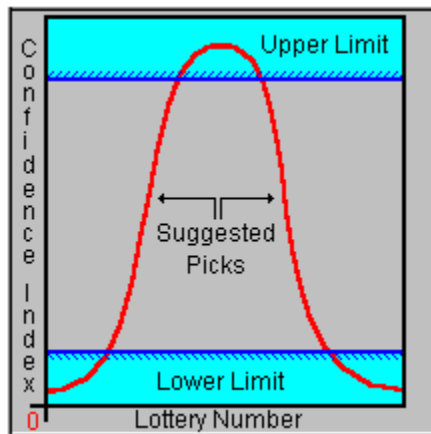
By default, the chart of rankings, mentioned previously, displays the rankings for each number by pick. In the lower right corner of the main data view window are two options, one for Numerical Analysis and one for Historical Data. The Numerical Analysis is the default view for the graph. Click on the Historical Data option and the graph will change from the analysis to a point to point line graph showing how the picks have been "moving" over the history of the game. You can also use the View/Historical Data (F5) and View/Numerical Analysis (F6) options in the main menu.

Within the graph, there is one line for each pick, the valid numbers for the lottery appear along the left edge of the graph and the index numbers for each winning play along the bottom of the graph (the index corresponds to the ID number for the winning play in the table on the left side of the main data view). This graph allows you to see the up and down movement of each pick which, in turn, can be a great aid in selecting which suggested numbers to use for that pick. If, for example, the pick rarely goes up three times in a row and it has just been up twice, it is a safe bet to only use suggested numbers for that pick which are less than the last number drawn for that pick. For more information on these graphs, see the Main Data View topic.

Control Limits

In order to get the most out of the numerical analysis, some sort of control has to be made over what is a good confidence index and what confidence indexes are pointing to bad "bets". As described in the number theory topic, LottoMan uses statistical analysis to arrive at the confidence indexes it lists. The resulting probabilities generally describe what is known as a bell curve (as shown below). The numbers with the highest confidence indexes are at the top of the curve (or in middle as you go from left to right). Those with the lowest confidence indexes will be out on the ends of the curve (or the tails) at the low points. The curve most likely will not be as "ideal" as the one shown, but will, most likely, be something close to it.

As a rule, any number that has a very low confidence index will be a pretty rare winning pick. Therefore, it would be nice to have some way of saying that "I don't want to see any number below a confidence index of X". What X is will depend on the game and your own personal preference. Perhaps it will be something of a surprise to you to know that quite often the numbers with the highest confidence indexes are just as bad as those that have a low index. Describing why that is so would require a journey into a rather lengthy discussion of statistics, so forgive us if we skip the why and ask you to trust us. (This is mentioned briefly in the topic on Using The Self Test).

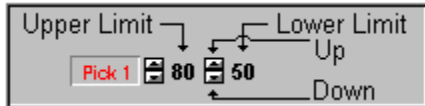


Understanding that the lowest confidence indexes and the highest confidence indexes are not good numbers to play, we want to set a value that "trims" off the high and low numbers we want to ignore. Those who are familiar with statistics will recognize the terms upper control limit and lower control limit. LottoMan provides both these for each pick in the game you are playing. The graph on the left demonstrated the effect these limits have on the confidence indexes LottoMan generates.

By setting an upper control limit to some value less than 100 (the maximum confidence index), LottoMan will ignore every number with a confidence index higher than the value you specify. In the same manner, setting a lower limit greater than zero (the lowest confidence index) will cause LottoMan to ignore every number with a confidence index less than the lower limit (These are the two areas shaded in light blue in the example shown). The end result is that the list of "suggested picks" that LottoMan offers will come from all of the numbers that fall between the upper and lower control limits. (The area in white in the example)

Experience will come to show that most of the winning picks come from numbers with confidence indexes somewhere in the middle range of indexes. perhaps a bit above or below fifty, but closer to the middle than either end. This is very important to understand and a point that many lottery program miss. Don't allow yourself to believe that the highest confidence indexes are the best, they aren't. For most of the games we play, we typically use indexes somewhere between 40 and 75, however it does vary some from game to game.

In order for you to get the most out of LottoMan, in playing the games of your choice, you very much need to spend some time running the self test in order to get a clear view of what the best control limits are for the game and for each pick within the game. As has been stressed more than once by now, please take the time to carefully read the topics on number theory, using the self test and picking your numbers.



Every pick control includes an upper control limit and lower control limit as shown here. The limit can be raised and lowered using the up and down buttons next to it. Alternatively, you can click on the number value for the limit and then use the up and down arrow keys to change the setting (note: using the keyboard will change the values faster than using the mouse). In the interest of saving time, LottoMan will not update the Numerical Analysis graph until you select a different control, button or menu option.

Internal Self Testing

Every lottery is different. If it weren't for that fact, programs such as this would be useless. All sorts of factors contribute to make them behave differently... the number of picks per play, the number of possible values for each pick and how those numbers are used, how the numbers are drawn, the materials used (is every Ping-Pong ball exactly the same?) and so on. Thus, what works well for one game may not for another. Further, with sixteen different methods of looking at the history and any number of confidence index ranges to pick from, how do you know which methods to use, how many past records are needed to get the best results and which ranges work best?

LottoMan offers a very brave feature to answer that question. An internal self test routine will systematically check the numbers the program would have suggested, using each method, against the numbers that were actually drawn. It then asks itself what ranking it gave the winning number and whether or not it would have suggested that number. As the test progresses, a table is maintained that shows you how the program is doing and where the winning numbers are falling in terms of their ranks for each method and each pick. We call this feature brave, because we are willing to air our dirty underwear... if the program is no good, you'll know it. We're quite confident however, that you won't find that to be the case.

Once again, we need to point out that math takes time on a computer. The presence of a math-coprocessor and a high clock rate will make a big difference in running the self test. It isn't mandatory, but it can make the difference between time for a bathroom trip and time to read the morning paper while running the self test. The self test is exhaustive. That is, it checks every record in the database against every calculation method and every combination of calculation methods and does a complete numerical analysis of the results. In terms of man hours, this might take a large staff of statisticians a week or two to complete by hand, if not longer. This is no small task, so please do not be discouraged if it seems to be "dragging" on. The self test is very important and something you should take the time to exploit to its fullest.

When it is all said and done, the tables show you how many times each winning number was suggested using the limits you provided and the rankings given to every winning number. While the self test can take a while with a large database, a few minutes in front of the results and you should have a solid handle on which methods to use and what ranges are best for each. If the suggestions weren't accurate enough, you can change the limits according to the rankings you see and run it again. In no time at all you'll find yourself in the comfortable position of knowing that LottoMan will make it easier for you to play your lottery.

Another thing the self test does is to look at how the program does in terms of picking the numbers in the right order verses any order. For games such as lotto which use a number only once, the program may suggest 15 as a first pick when after sorting the next draw appears as the second pick. In this case it got the right number in the wrong pick. While this may sound odd at first, it makes sense in the long run. Since each pick is being treated as its own series of numbers, it stands to reason that the next number in the series may not fall in the same pick. And, in fact, experience has shown us that this is the case more often than not... in fact, the odds of the program getting the numbers in the right order is substantially lower than getting them in any order.

When looking at the self test, it is just as useful to note where the program consistently misses the winning numbers as hits them. Why? Because knowing where the program doesn't get the numbers right tells you which numbers not to play, which is every bit as important as knowing which ones to play. If, for example, the winning number is ranked between 20 and 30 only once in every 100 plays, then it is a fairly safe bet to not use any number ranked in that range. Now you have a few less numbers to worry about picking from and your odds just got better. Further, if the program never gets all six numbers in the right order for the Lotto, you know that at least one of the numbers you choose should cross over to another pick after sorting... or, more simply, if every number you pick from the suggestion list would be in the same pick after sorting, you know that is not a winning play.

That effectively eliminates every play that sorting does not change the order of the picks for and you've improved your odds even more. Take that a step further with the understanding that the program only gets five picks in the right order in 1 out of every 50 plays, and you can now eliminate every play in which five of the numbers are in the correct order and improve your odds even more.

Aside from telling you what doesn't work, the self test will also tell you what confidence indexes were assigned to the winning picks in the past. You can use this information to identify the range of confidence indexes that produce the most winning numbers and set your upper control limit and lower control limit accordingly for each pick.

Along the same lines, the self test will tell you which combinations of calculation methods produce the most winning numbers and which ones constantly fail to produce winners. This information is invaluable given all the options before you. You need to know what works in order to make the right decisions. Just as importantly, you need to know what doesn't work so you can know what numbers not to play. Between these two views you can reduce the list of numbers from which you have to choose to a fraction of the numbers used by the lottery.

Wheeling Numbers

With the history of the lottery in place, analysis performed and the methods and ranges set, it's time to move from what has been to what's to be. Deep down inside, the program is just busting to tell you what it thinks about the next drawing. To get to the suggestions list, select the View/Number Wheel option from the main menu, or, with your play list active in the data table, click the Run Wheel button. LottoMan will display the number wheel dialog. The idea behind the number wheel is to provide an easy way of looking at the numbers the program is suggesting you use, picking the ones you are going to use and then generating the plays for you to run off to the lottery retailer with.

The dialog is divided into eight sections... one for each of the picks and two for bonus numbers. Within each section is an edit box you can use to add your own numbers to the wheel, two lists boxes and add and delete buttons. The list box on the left will contain the list of suggested numbers for the pick. It should be pointed out that the suggestions are listed in order of their ranks from highest to lowest, not numerical order. Thus, the number at the top of the list has a ranking equal to, or better, than the next number in the list.

To use one or more of these numbers, use your mouse to click on the number, or numbers, you want to play, then click on the Add button. The number(s) you selected will be removed from the left hand box and added to the right hand box. This list box contains the list of numbers to be used to generate your plays. To remove a number from the right hand list, click on it using the mouse and then click the Del button. The number will be moved back into the left hand list of suggestions. When a number is removed from your list of selected numbers, it is placed at the bottom of the suggested list, not in its position according to rank.

Aside from selecting the numbers to use in generating your plays, the number wheel also provides two sets of options to control how the plays will be generated. The first set of options, generation methods, defines how the numbers you have selected should be pooled for generating the plays. The second set of options, target combinations, define how the plays you will be making are drawn from the pool of numbers you have selected. Between these two sets of options, you have extensive control over the generation of plays.

There are three generation method options available. The first, Combine Pick Lists, treats all of the numbers you select as belonging to a single pool of numbers. When you generate your plays, the program will pick all of the numbers in the play from this one combined list. The second option, Combine By Pick, treats the numbers you select as belonging to individual number pools; one for each pick. When plays are generated, using this option, only one number is drawn from each pool per play. In other words, no two numbers in a given play will have come from the selection list for the same pick. The last option, Completely Random, means just what it says. In this case, the plays generated will be completely random and have nothing to do with any numbers which might be in the selection lists. This option is the same as buying quick pick tickets.

The target combination methods provide three different ways of generating plays from your pool of numbers. The first option, Guaranty Matches, is the most potent and meaningful of the three. IN this case the program will choose a set of plays that will guaranty that if all of the winning numbers are in your pool of selected numbers you will have at least one ticket that matches the number of picks you specify. In other words, if I select 8 numbers into my pool and request a guaranty of matching 4 of them, if any four or more of the winning numbers are in that pool of eight, I will match at least four on one ticket. If all six numbers are in my pool, I will match at least four and could match five or six. The second target option, Exhaustive, will generate every possible combination of numbers that can be made using the numbers you have pooled. The last option, Random Plays, will randomly select the number of plays you specify from all of the possible combinations using your pooled numbers.

In addition to the options already covered, the number wheel also provides some detail about

what will happen when you start generating numbers. The wheel maintains a constantly updated detail which details how many numbers you have pooled, how many combinations of those numbers can be generated and how many plays your selections will generate. You can use this information to ensure, first, that you aren't about to generate a few thousand plays you don't mean to and to gain some idea of the "coverage" your selections will provide.

Once you have your list of numbers and the generation method worked out, click the Go button and the number wheel will automatically generate your numbers and place them in your list of plays. If the data view table is currently displaying the winning plays, you won't see it happen, but it does. To see your plays, you'll have to close the number wheel and either click the View Picks button or select View/Your Plays from the menu. Otherwise, if your plays are already being displayed in the data view window, you'll see the new plays added as the number wheel does its work. When you're done with the number wheel, just click Close and you'll return to the main data view window.

One final note about the number wheel. For various reasons, it does not remember the numbers you chose to use for each pick after you close it. In other words, the right hand list of numbers for each pick is cleared when you close the number wheel. We hope to find a good solution to saving this list in the future, but haven't come up with one as yet. If you're going to close the wheel and want to save the list of numbers you chose for each pick, I'm afraid you'll have to write it down and select them again the next time you run the wheel. We suggest you take the time to make sure you've got the plays you want before you close the wheel. Obviously, the plays generated by the number wheel are saved in the table.

Registering LottoMan

About Shareware

The Shareware distribution method is an innovative way to market - and obtain! - exciting new software like LottoMan. Users like yourself are given the opportunity to test-drive software for free or a nominal distribution charge. Independent software companies like Lighthouse Engineering are offered the freedom to publish their software titles with minimal overhead. Low overhead helps keep prices down and spurs a brand of creativity and dedication found only in the Shareware market.

Shareware distribution depends on the support of those who use Shareware products. Please feel free to give copies of the Shareware evaluation version of LottoMan to your friends and colleagues. And, remember, if you use LottoMan beyond the evaluation period, it is your responsibility to register.

Why register?

Users are granted a license to use this Shareware evaluation version of LottoMan for a thirty (30) day evaluation period without cost. After this period, you must either register the program or remove it from your system. We certainly hope you will find LottoMan useful and register it.

- First and most important... Shareware, as a concept, depends upon the honor system among those who evaluate the programs. If users do not register the Shareware they use, the authors earn nothing for their efforts and will, eventually, give up the idea of Shareware distribution. You, as a computer user, will lose a valuable source of affordable software. If you like the Shareware applications you use, their authors deserve their due.

As a registered user, you will receive...

- A license for continued use of LottoMan
- A disk containing the latest version of LottoMan
- Your personalized Serial Number and Password
- Unlimited free support via telephone or CompuServe
- Free updates to any and all future version 1.XX releases. (A minimal disk and shipping charge may apply if you do not use your own activation codes)
- Substantial discounts on any major version releases of LottoMan or on other Lighthouse Engineering software releases. (NOTE: Major releases will require new activation codes - your codes will not work on these versions)
- A free one year subscription to the LottoWorld® Magazine.

How To Register

There are two options for registering your copy of LottoMan. The easiest, and fastest, is to register via CompuServe. Alternatively, you can register by mail. In either case, Lighthouse Engineering will deliver your registered copy of LottoMan via US ground mail. If you want your copy shipped via an alternative method, you will need to include shipping instructions and an amount equivalent to the increased shipping costs in US dollars.

Registration Via CompuServe

To register your copy of LottoMan via CompuServe, GO SWREG and search for the database ID number 3604. Once you have located the database entry for LottoMan, follow CompuServe's instructions for registering your copy. The cost for on-line registration is \$129.95 US for customers in the continental US. Additional shipping charges apply for other areas.

As soon as CompuServe has validated your order, we will be notified via E-Mail and will ship your registered copy immediately. If you would prefer to receive your copy over CompuServe, send an E-Mail message to 74151,1035, at the same time you place your order in SWREG, requesting electronic delivery. As soon as we receive notice of your order having been approved by CIS, we will send your copy to you as an E-Mail file transfer. The charges for this transfer will be split with you and should be somewhere under \$20.00 US.

Registration Via Mail

To register your copy of LottoMan via mail, make a check or money order payable to K. Scott Piel in the amount of \$129.95 US and mail it to

K. Scott Piel
c/o Lighthouse Engineering
5055 Pleasant Valley Rd.
Virginia Beach, Virginia 23464-6005
(USA)

For shipping into Canada and Mexico, add \$2.50 US, Europe, Africa, South America, Puerto Rico, Hawaii add \$5.00 US, Australia and Asia add \$7.50 US. You can print an order form by clicking on the "Print Order Form" button in the dialog displayed when you first start LottoMan or after clicking on the Help/About menu option.

Please be sure to include your complete return address and a phone number. As soon as your check is cleared (3-10 working days or immediately if sending a money order) your copy will be returned via US mail.

Getting your personal activation codes fast

If you have accounts on CompuServe, America Online, Prodigy or Internet access, you can get your activation codes as soon as your payment has been received and cleared. To do so, E-Mail Scott Piel at 74151,1035 on CompuServe, LHouseEng on America Online, KAYX45A on Prodigy or sent Internet traffic to 74151.1035@compuserve.com. Request your activation codes and we will send you back a reply as soon as your funds have been cleared. You may then use these codes to activate your shareware version without having to wait for your disks to arrive and to download and activate upgrades as we make them available. See the topic on Registering Your Copy for more information on using your activation codes.

Please register today and support the further development of LottoMan and other Lighthouse Engineering Shareware products. The Shareware concept can only work with your support.



Confidence Index

The backbone of LottoMan's analysis of the numbers is the idea of a confidence index. In this topic we cover what a confidence index is, how they are created and what they mean.

First, and foremost, a confidence index is a measure of the likelihood that a given number will be drawn in the next game. Loosely speaking, the higher the confidence index, the better the probability, based on the current calculation methods being used, for the number to be a winning pick in the next draw. I say loosely speaking because of a couple of things, first of all a very high confidence index is likely to be an anomaly and, therefore, not a good number to select.

A confidence index is the final measure of the statistical analysis that LottoMan has performed on the past history of the game. The first thing the program does when it examines the past data is to develop a set of empirical probabilities for each number based on this history. For those of you with some knowledge of statistics, the probabilities may be converted into standard deviations and finally z-scores before being assigned a confidence index. For those who haven't a clue about what I just said, don't sweat it as it really doesn't matter.

After the program has arrived at a final set of z-scores or probabilities for each number it converts them into a normalized index which we call a confidence index. In short, the number with the highest probability or z-score is given a confidence index of 100 and the number with the lowest probability or z-score is assigned a confidence index of zero. The remaining numbers receive confidence indexes which place them in-between the two ends in a position which is proportional to their location between the highest and lowest probability or z-score. For those who are burning to know, the math for the confidence index (CI) looks roughly like this...

$$CI = (\text{score} - \text{min_score}) * 100 / (\text{max_score} - \text{min_score})$$

The things that are important to know, for those who might get lost in a mathematical discussion, is that every pick and every method will have at least one number with a confidence index of 100 and at least one with a confidence index of 0. The values of the confidence indexes between these two ends is a measure of the number's probability relative to all the other numbers in the game. The higher the confidence index for a given number, relative to the rest of the numbers, the more probable it is (relative to the rest) for the next draw.

Also, since each pick is normalized, the confidence indexes in one pick may not relate directly to those in another pick. In other words, if 5 gets a CI of 75 in pick one and a CI of 75 in pick two, the actual probabilities for 5 in the two picks are not necessarily the same. What this situation is telling you is that 5 is just as likely in pick one, relative to the rest of the numbers, as it is in pick two, relative to the rest of the numbers.

Number Theory

This is a somewhat nebulous topic and one that will tend to vary from one user of [LottoMan](#) to another. This topic does not, and will not, attempt to describe how to specifically use any part of the program. Rather, it will attempt to describe some of the background you need to get a handle on to make intelligent decisions about which numbers to [play](#) in the lotteries of your choice. A list of related topics appears at the end of this section which cover specific details about using [LottoMan](#). Secondly, this is a *very* long topic. I *highly* recommend that you print it and sit back in your easy chair to read it. You're certainly welcome to squint at your monitor if you like, however, research on this sort of thing claims you'll get more out of it if it's on paper.

Let's start this discussion with a look at what lotteries are and some terms we need to be sure we are both using the same "language" to describe the lottery. Lotteries are first, and foremost, random events. That is, the results of a lottery are based on the random drawing of a set of numbers. Whether or not a lottery is perfectly random is something that should be left to the theorists. In my opinion, it can be argued either way. The fact that lotteries are random is what makes it so difficult to win one. There are cases of lotteries which have been found to be other than random by an intelligent and observant individual or two and their discovery served both to make the person a bit wealthier and to force the lottery operator to change the rules. It may well be that the lottery you are playing falls into this category and careful analysis may reveal that fact, but don't count on it. Leaving the argument of the randomness aside, we'll make the assumption that the lottery is random. That being the case, it is, by definition, impossible to predict with any certainty the result of the next [draw](#). Anyone who claims otherwise either hasn't a clue about randomness and statistics, is leading you on, or knows something about the lottery you should know (i.e. the case where the lottery isn't random). The best that any person can hope to do is to achieve the best possible odds of winning. While these odds may be quite high, we can hope they are significantly better than the theoretical odds for the lottery.

The first thing we need to do is define some terms for talking about a lottery so that we understand each other. A lottery is a form gambling to be sure, but we'll be nice and call it a game. In a lottery you, the player, are betting on a set of numbers that you have "guessed" will be picked the next time the lottery is drawn. A [pick](#) means reaching in the bag and pulling out a number, a Ping-Pong ball popping out of the machine, etc. Each "pick" is a single number. Put together all of the picks it takes to complete the draw and you arrive at what we call a play. A winning play is all of the picks the lottery operator made for the draw and a user play is all of the numbers you think are going to be drawn. Another term for a user play is a bet. In most lotteries you are betting fifty cents or a dollar that a particular group of numbers will be drawn to make the winning play. A match is when a number you picked in your play matches one of the numbers drawn in the winning play.

There are two basic ways in which the numbers are used within a game. The first is an ordered game. In this type of game, to win, you must not only guess which numbers are going to be drawn but you must also get them in the right order. Examples of this type of game are the old numbers racket, the daily pick three games most lottery states are running, etc. Most ordered games use the same set of numbers for each pick. That is, the first pick might be any number between zero and nine as will be the second and third picks. The fact that one is drawn for the first pick does not mean that it can not be drawn for the second and/or third pick. Games that use these types of numbers are using a repeating set of numbers. The second type of game is an unordered game. In this game you only have to worry about which numbers are going to be picked. The order in which they are drawn is not important. This, obviously, makes the job much easier. For this reason most unordered games use a much larger set of numbers to pick from, thus increasing the odds against your getting the right numbers. These types of games are also, typically, restricted to using each number just once. In other words, if five is drawn for the first pick, it can not be drawn for any of the remaining picks. Lotteries of this type include the typical state lotto games - the multi-million dollar games. Another example would be filling a bag with chips numbered one through ten and drawing chips out. Once you pull the ten out of the bag, you've drawn the only ten in the bag and you can't pull it out a second time.

The first technical matter we need to understand is how to arrive at the theoretical odds for a game. This calculation makes the assumption that all things are equal and, therefore, the odds of any one number being picked for a given draw are identical. There are four ways a lottery can be run described below. Nearly every lottery being run today uses either the first or last method described and LottoMan does not, at this time, support the remaining two.

First we'll consider an ordered game that uses repeating numbers. In this case we simply raise the number of digits in the set of numbers to a power defined by the number of picks. In other words, we multiply the number of digits in the first pick by the number of digits in the second pick, and so on, for each pick in the game. For example, if the lottery uses three picks where each pick can be a number between zero and nine, the odds are 1 in 1000... $10 * 10 * 10 = 1000$.

The next type would be a lottery which is ordered but only lets numbers be used once. In this case when the first number is drawn, there is one less number to be drawn for the next pick. In this case we can calculate the odds by multiplying the total number of digits in the game by the number minus one for the second pick, minus two for the third pick and so on. Using the last example where there are three picks between 0 and 9, the odds would be 1 in 720, or $10 * 9 * 8 = 720$.

The third lottery type is one that repeats numbers for each pick but doesn't care what order they are drawn in. In this case, the odds of any given number being drawn is $1/n$ where n is the number of picks in the lottery. Thus the odds for the lottery is the total number of digits for each pick divided by the total number of picks raised to a power defined by the number of picks. Thus, if the lottery uses the numbers zero through nine for three picks the odds would be 1 in 37, or $10/3 * 10/3 * 10/3 = 37$. This calculation describes playing a game like the daily pick three and betting on three numbers in any order.

The last type is what is normally used for games like the multi-million dollar lotteries. In this case order does not matter but numbers can only be used once. This is similar to the last type except that we subtract one from the total number of digits for each pick. In a game like the Virginia Lottery's Lotto, there are 44 numbers and six picks, so the odds are 1 in 7.1 million, or $44/6 * 43/5 * 42/4 * 41/3 * 40/2 * 39 = 7,059,052$. Steep odds indeed!

These high odds are what the lottery operator is counting on. You are betting one dollar on each play. Thus, to win a game like Virginia's Lotto, you would have to bet 7.1 million dollars to guarantee a win. However, since the starting prize amount is 1 million, the state would come out a few million ahead in the exchange. While you're never going to bet that much, when you put all the players together this rule begins to show how the state is making it's money. If a few million players all bet one dollar and each one bets on a different number, one of them will win a million bucks and be a happy camper; the state will make six million and be even happier. The rest of us lost a buck.

Recognizing that we can not be certain we'll win and that the odds are stacked heavily against us, the key to success (if we're insisting on taking the chance) is to make every effort to improve our odds of winning. If, for example, I could (somehow) have an 80% certainty of winning a multi-million dollar jackpot with a \$1,500 bet, to be honest, I'd have to think about it pretty hard. That's a lot of money to lose but the potential gain balances the risk pretty well. This raises the question of how do we achieve some degree of certainty about our bets, or more accurately, what can we do to improve the odds on the bets we make?

The answer to that question is actually fairly simple and, perhaps, a bit surprising. The answer is not to try and guess at what the right answer is... again, lotteries are random events and you can not predict with certainty the outcome of the next event. The answer is to eliminate everything we can be fairly certain is not the right answer. For the sake of this discussion I am going to concentrate on games like Lotto which use numbers only once and are not order dependent. In all likelihood, that is the game most of you are looking to use LottoMan to try and win. Most of this discussion translates directly to games like the daily and you should be able to make the mental adjustments where

needed.

There is only one correct way to go about eliminating the unlikely and that is to use probability analysis to learn what the lottery "normally" does. Understand that theoretical probability is not always the same as the empirical probability. In other words, what we expect in a perfect world where all things are equal is not likely to be the same as what we experience in our world full of variables. For example, rolling a six sided die offers theoretical odds of 1 in 6 for each possible result. However, anyone who has ever owned a pair of loaded dice knows that probability can be altered. What makes the difference? In this case, the balance of the dice. If you put the center of the weight furthest from the side you want to show, it will show up more frequently than it should according to the theoretical odds. So what about a die that isn't loaded? Well, is it perfectly balanced? Probably not, though it may be very close. Other factors may also come into play... Is one edge more worn than the others? Is a corner chipped? By now you should be getting an idea of where this is headed.

Understanding that all things are not likely to be equal, we'll discard the concept of theoretical odds and move on to what is more useful, the empirical (observed) odds. To determine the empirical odds for an event, we observe the event over a period of time and record the results of each occurrence (i.e. we keep a history of the outcome of each draw in the lottery). Once we've established a respectable collection of data we can throw a little simple math at it to learn what "normally" happens. Going back to the dice example; if we sit and watch a crooked craps shooter throwing their die, and write down the results of each play, we will quickly learn that they are using loaded dice by recognizing that the results they are getting are a *long* ways from the 1 in 6 odds we would expect. Assuming the house is dumb enough to have been fooled by this player, we can cash in on their little gambit. If, on the other hand, we were assuming the dice were fair, we would be losing just as fast as the house was.

Another way of looking at this is to use a picture, or graph, of the results. If we were to plot the odds of the theoretical odds of the single die throw, it would be a straight line across the page. That is, the odds of each result are identical. On the other hand, if we were to plot the empirical odds for our sneaky gambler, the result would be much different. In this case we might find that the odds of a six are much higher than the odds for the remaining numbers and our graph would have a peak over the six and a valley over the one (on the side opposite the six). At a glance we can see that the likelihood of a one result is almost nil and can, thus, be eliminated as a good bet. Now the odds of our winning a bet on the next throw are nearly 1 in 5 instead of 1 in 6. We might also find that the odds of a six are 1 in 2 and we'll just keep betting six and forget everything else. The point to all of this is that by looking carefully at the history of the game, we can make some inferences as to what is likely to happen in the next play and what we can be fairly certain is not going to happen.

Go back and look at the math required to determine the odds of winning the lottery. The entire idea is based on nothing more than the number of possible results. By eliminating the unusual results we can make the odds much better without doing anything else. For example, if we look at the Lotto's 44 possible numbers for each outcome and can eliminate 10 of them from each pick, we have changed the equation for the odds. The new odds would be 1 in 34 for each pick instead of 1 in 44. The overall odds would be reduced to $34/6 * 33/5 * 32/4 * 31/3 * 30/2 * 29 = 1$ in 1,344,904. Still mighty steep odds but a major improvement over the theoretical odds... Six times better actually. As an aside, let me state at this point that computers are by nature extremely good at doing the math and analysis needed to give the information needed to eliminate the "unusual". However, they are equally bad at make the inferences needed to do the actual eliminating. This requires the abstract thinking ability of people and LottoMan does not pretend to be a people. It's up to you to use the information LottoMan provides to make the decisions as to what numbers are unlikely and what numbers are good.

So how can we go about improving the odds? The first trick LottoMan employs is to sort the

individual picks in games like Lotto. Why? Look at the math for the odds again... The math implies that the odds for any given result are even. In other words, the graph of the probabilities for each number is a straight line. Sorting the results injects order into what is otherwise a chaotic or random event. The resulting graph of the probabilities is no longer a straight line, rather, it becomes what is called a bell curve. A bell curve graph looks like a bell (thus the name - statisticians are such creative people). The graph is high in the middle and falls away to both sides. What this means is that the numbers in the middle are drawn more often than those on either end. Or, more importantly, we can eliminate the numbers on the end with a fair degree of accuracy. Why does this happen? The easiest way to explain the effect is to look at what sorting does to the result. Since the numbers are arranged in order from lowest to highest, it becomes outright impossible for the result one (1) to be the second sorted pick. Since no number is less than one, every time it is drawn it has to be listed as the first pick and, therefore, can not ever be the second pick. The same thing happens at the opposite end of the chart. The number 44 must always be listed as the sixth pick, after sorting, since there is no larger number. Further, the number two *could* be the second pick after sorting but *only* if one was the first pick. Thus two is not likely to be the second pick very often, rather, it will typically be listed as the first pick. The picture should be starting to clear up here. In short, certain numbers will simply appear more often in one pick than the other after sorting for no better reason than their order in the number line.

Putting this knowledge to work, we can examine a graph of the probabilities for each pick and fairly eliminate all of the numbers that are out in the low points of the curve. They just don't happen often enough to be of much concern. It doesn't mean they won't happen, it's just rare enough to constitute a bad bet. This view of the outliers is where the idea of a lower control limit comes to play. Each pick in LottoMan has a pair of limits, an upper limit and a lower limit which we can use to trim off the numbers we want to ignore. The bell curve we are looking at is represented as a set of confidence indexes. These are nothing more than the probabilities for each number. The higher the index, the more probable the number as a draw and visa versa. Looking at the low confidence indexes assigned to the outlying numbers, we can set the lower limit to a value that eliminates all numbers with a lower confidence index. The outliers are gone and we've effectively reduced the number of possible results for the pick.

The opposite side of this approach is the idea of the top, or peak, of the bell curve. Just because a number sits at the top of the peak does not mean that it is going to be the next number drawn. Take, for example, aging analysis that looks at how much time typically passes between draws of a given number. The more time that goes by without the number appearing, the higher it will move on the curve. If a great deal of time goes by, it will sit at the top of the curve. How do we know what is "normal" for the time between draws? We find this out by counting the number of draws between each time the number is drawn and then use that information to find the average time between draws. What happens if through some freak of nature the number in question showed up a whole slew of times in a row? This will skew our idea of what is a normal time between hits and lead us to believe that what is really a normal time between draws is actually "overdue" and thus place the number at the top of the curve. Just as a number may lay well outside the curve (on the low end) it might also tend to the high point of the curve and be just as unlikely a candidate for betting on. For this reason, we have the upper control limit. This limit allows us to ignore numbers that are at the top of the curve as being "unusual" in their location. Any number that has a confidence index above the upper limit we set is also ignored. While the lower limit is far more reliable in eliminating the unlikely values, the upper limit can also be just as useful though a bit more questionable.

The key to finding out what upper and lower limits to use is to fully understand how the Lottery will typically behave. To this end LottoMan offers the Self Test mode. Using this mode we can set an upper limit of 100 and a lower limit of 0 (effectively including every possible number in our analysis) and run the self test on the data we have collected (the winning numbers from all of the past draws). When the self test is done we can look at the results to see what confidence indexes were assigned to the numbers that actually won. What we are looking for is an idea of where (what confidence indexes are normally given) the winning numbers for each pick tend to cluster. You'll quickly find that it is very rare for a winning number to have had a low confidence index... Perhaps only three out of

every one hundred plays had a winning number with a confidence index below twenty. In this case we can eliminate every number with a confidence index below twenty and be right 97% of the time. Likewise, we can apply the same rule to numbers with very high confidence indexes in order to set our upper limit. Once we've decided what limits to set, we can set these values for the self test and run it again to see how well we would do using these "rules". A little trial and error and we should arrive at a set of limits that offer fairly consistent odds of winning. Notice, also, that different analysis methods work better with different limits. What we're out to do is to find the best combination of methods and limits. The set that most consistently produces winning numbers. This can require a fair amount of effort on your part and an equally fair amount of computer time to determine, but in the end you'll arrive at a set of values that let you play the lottery with at least a fair degree of confidence in the bets you make.

Once we've settled on a set of limits and methods that works best for the lottery we are playing, we are left with the need to pick which of the numbers that remain to play. The rule here is fairly straight forward: the wider apart your upper and lower limits the more often the winning numbers will appear between them, but the more numbers you will have to pick from to find those winning numbers. There are a few more things that can be done to achieve this goal. Putting the idea of confidence indexes aside, let's look at the historical trend of the lottery. This can be extremely useful since we've sorted the numbers. Using the Historical Data graphing option, we can look at how the individual picks have tended to move over the history of the game. At a glance you'll see that they tend to look like the edge of your average pruning saw. They move up and down in a fairly regular path. In fact, you're likely to find that moving in the same direction twice in a row is far less likely than for the movement to change direction on each draw. In other words, if the number for the last draw was less than the number for the draw before it, the next number is likely to be bigger than this last number.

While this rule is somewhat accurate, movement in the same direction twice in a row is not all that unusual and betting on a change of direction on every draw is not a very good idea. On the other hand, seeing a pick move in the same direction several times in a row is pretty unusual and thus makes it a fairly safe bet to eliminate every possible number in the "wrong" direction. LottoMan does not try to do this on it's own. Thus, without regard to what the number has done over the last few draws, it is suggesting all likely numbers. When you see this condition taking place, you can eliminate the numbers LottoMan is suggesting in the opposite direction of the one we are expecting the movement to go. Again, the whole idea is to whittle away at the possibilities until we arrive at a much smaller set of numbers that offer a very good likelihood of being drawn. As always, when working with random things, we have to expect to be surprised, but we can also expect to right more often and that is the goal.

The vector analysis mode is provided as a means of looking at how the lottery's picks have moved in the past in order to learn what the probabilities are for the next draw. This option can be used to scan the history of the lottery for plays which match the same movement direction, distance moved and/or winning pick. After it has finished scanning the database for matches, it provides a simple display of what percentage of the time the next pick moved up or down and how far it moved. This information can lend invaluable insight for picking the numbers to be used next. If 95% of the plays that follow three consecutive upward movements have moved down, you can be quite confident in discarding any number larger than the last winning pick.

A second point needs to be made with respect to the historical data graph. It clearly illustrates what we have been discussing with respect to limits and the bell curve that results from sorting the numbers. If you look at the lines drawn for each pick you will quickly see that certain numbers just plain don't happen for each given pick. And many that do show up do so with such a lack of frequency as to be completely ignored. In other words, the historical data graph will show with striking clarity that there is a range of values which is "normal" for each pick. Using this graph alone can eliminate a large number of "possible" results for each pick. It can also provide a fairly clear

picture of what numbers the pick tends to cluster around. For example, if you look at pick one for the lottery, you'll note that it's values are almost always between one and fifteen. Anything else is possible but not very likely.

This raises another **very** important issue and one that anyone who has failed to read this entire topic is going to suffer for having missed. LottoMan looks at each pick as an individual entity. The analysis of pick one has no idea that pick two even exists. In other words, pick one is a random event of it's own and has absolutely nothing to do with pick two. This is a side effect of having sorted the results of each draw. What sorting has done is change the fact that the first Ping-Pong ball that pops out of the machine could be any number between one and forty-four to the fact that pick one can never be anything other than a number between one and thirty-nine. If, by some freak of nature, the numbers 40, 41, 42, 43 and 44 are drawn, the fact that the picks are sorted means that they **must** be picks two, three, four, five and six. It is simply impossible to be anything else. Likewise, pick two **must** be between 2 and 40, pick three between 3 and 41, etc.

This individual treatment of each pick makes it possible to make inferences about the next draw that simply could not be made otherwise. However, it also has a potentially lethal side effect. For some reason or another, this "view" of the lottery tends to make people believe that since pick one is evaluating the lowest numerical result of the past draws, it must also be predicting the lowest result of the next draw. **THIS ASSUMPTION IS FLATLY WRONG!** Each pick is evaluating the history of that pick, alone, and making some inference to the next number in the series for that pick. However, each pick also overlaps the other picks. Thus the next number in the series for pick one may be larger than the next number in the series for picks two and three. Remember that the picks have no idea that the other picks exist. Their results are, therefor, independent of the other picks and you should EXPECT them to overlap. In other words, if you sort the predictions for each pick, you should expect the result to be in a different order than the picks that predicted them.

If you choose numbers for the next draw that are already in sorted order, you should plan on losing the bet. It's that pure and simple. This fact is clearly demonstrated by the self test mode. After running the self test (with a set of limits other than 0 and 100) look at the resulting number of winning matches in order of pick (use the By Pick option) versus the number of winning matches in any order (Any Pick option). The difference is startling. Using the sorted By Pick option you will most likely only come up with one or two cases where you match all six winning numbers. On the other hand, the Any Pick option may produce winning tickets in as many as 50%, or more, of the draws (depending on how large the gap between limits). This is very important knowledge. What it is implying is that you will improve your odds of picking winning numbers if you make sure the numbers you choose are not in numerical order before they are sorted. I.E. Be sure that you pick numbers in one pick that are less then the number you chose for the previous pick or more than the one you choose for the next pick. This mixing of the order coincides with the fact that the predictions themselves will almost always be in the "wrong" order and, therefor, is more likely to be correct.

There is one final thought that needs to be covered here. Consider the numbers you choose in terms of the possible ways they might be drawn after being sorted. For example, there is only one possible combination of 1-2-3-4-5-6 as a winning number. However, there are 39 possible combinations of 1-2-3-4-5 which is also a cash winning result. Along the same lines, 1-2-3-4 offers some 780 possible combinations, yet is still a cash winning number. Going the last step, 1-2-3 offers some 10,660 combinations which, in Virginia, are free tickets and in other states it might be \$5. For this reason, if I am "certain" that 1-2-3 is going to come up in the next draw, I could bet every combination and be assured of winning. In this case my bet of \$10,660 would produce a million dollar win. Obviously I could be wrong about the 1-2-3, but those three values are much easier to predict than all six. However, even if I am wrong, the fact that I played every combination of those three numbers means that if I get one wrong, I also got five numbers right on three tickets and four right on thirty-nine tickets. In Virginia that would be roughly \$6,450 plus a free ticket for all the remaining tickets that matched three. Thus, while I lost, the total cash loss was significantly less than the cash bet.

The point of this observation is that you should start by picking the numbers you are most certain are coming up. From there select some combination of the numbers you are less certain of. I wouldn't advocate you making a bet as large as the previous example, it simply illustrates that picking the smaller set of numbers you are most sure of makes the job of picking the remaining numbers a bit more flexible. This approach will produce more frequent wins than trying to bet on all six numbers. It is worth noting that, by nature, the easiest numbers to pick are the first and last. The level of confidence for these numbers is by far the highest. With those two numbers under your belt, the next two most confident are the second and fifth picks. The most difficult to predict are the middle two picks. Thus, you should start by selecting your outside numbers, from there select a couple of numbers for the second and fifth picks and then pick several numbers for each of the third and fourth picks.

Related Topics

- [Historical Analysis In Brief](#)
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- [Wheeling Numbers In Brief](#)
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- [Picking Your Own Numbers \(plays\)](#)
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- [Viewing The Historical Data](#)
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- [Running The Number Wheel](#)

Using The Self Test



Stop

If you haven't already read the [number theory](#) topic you should read it before reading this section. You might also read the [self test](#) topic for an understanding of the parts of the self test window, the options available, etc. As with the [number theory](#) topic, you may want to print this one in order to get the most out of it.

The self test is the most important tool [LottoMan](#) offers for playing the lottery you are interested in. It is important to understand that every lottery is different by nature. The number of picks, the number of possible numbers, the picking method, etc., all combine to make each game behave in a slightly different manner. Without an understanding of the nature of the game you are playing, you are throwing horseshoes in the dark and hitting the spike is less likely to happen than you being hit by lightning. To pick the numbers you are going to play, with any degree of certainty, requires that you fully understand what typically happens in the game. The process I'm going to describe here may sound like a good bit of work, however, you only have to do it once and when you are done you will find yourself well armed to tackle your lottery head on. You might be surprised about what you'll learn about lotteries in the process.

The first thing that is required, to achieve this end, is to develop a good collection of past history to be studied. The accuracy of the program is directly related to the accuracy and completeness of the database of past winning numbers you provide. Take the time to collect information on as many past draws as you can get your hands on and enter them into your database. Make every effort to get all of the draws and do not, if you can help it, skip draws. Holes in the data are more misleading than no data at all. Also be sure your information is accurate. Wrong history means wrong results. Period. Two good possibilities for finding past history are your lottery administrators and the local newspaper. Most lottery commissions publish a small booklet that list the winning numbers for the various games going all the way back to the beginning of each game. Give the lottery administrators a call and ask. Odds are the book is free. Failing that, contact your local newspaper, they may have an easy to access listing.

Assuming you have collected and entered the history for your lottery, it remains to study it and learn what works best to make predictions for the next draw. This is the domain of the self test mode. Start by setting the upper and lower limits for each pick to 100 and 0 respectively. This means that the self test will consider every confidence index in the analysis. Run the self test. The first thing you'll notice is that the limit table says you matched every pick in every draw. That makes sense since every number was predicted and, obviously, the information in the limits table is pretty useless.

What we are after, however, is the confidence indexes assigned to the numbers that actually did win. When the first self test is completed, take the time to look over the CI graph carefully. What we are looking at is where the confidence indexes tend to cluster for each method and each pick. What we want to find is a method for each pick where the majority of confidence indexes cluster in a narrow range. In other words, if 60% of the winning numbers are ranked between 50 and 75 for pick two using Aging, Delta and Frequency, we can be fairly confident of the numbers that these conditions would predict for the next draw.

Look at the graph that is presented for each pick using all of the possible combinations of calculation methods and the By Pick option. If the graph appears as, more or less, a straight line, the combination of methods you have selected is not working well for that pick. We're looking for the combination of methods that produce a graph with the largest possible curve in it or a range of confidence indexes that hit more winning numbers than the remaining confidence indexes. In other words, we want to find a large number of winning picks that are being assigned confidence indexes in a narrow range. The more winners that fall within a small range of confidence indexes, the easier it will be to pick numbers to play using that combination of calculation methods and range of limits.

Once you find a method that is producing a nice curve in the graph, set the upper limit and

lower limit for the pick to the values that enclose the most possible number of winning picks in the narrowest possible range of confidence indexes. That is, the further apart the upper and lower limit, the more numbers LottoMan is going to suggest you play, and therefore, the harder it will be to pick the right numbers from the list. The relationship between the upper limit and lower limit and the graph is taken from the numbers along the bottom of the graph. The highest number would be assigned to the upper limit and the lowest number to the lower limit. For example, if the graph is fairly flat up to 70 then grows up in a curve and back down to 90 and proceeded more or less flat from there, you would set a lower limit of 70 and an upper limit of 90. You can get a little help in this effort by setting the limits you think might work and then click on the pick again to update the graph and the resulting analysis information (in the top right corner of the window). If you can set a range of limits (i.e. 40-60) where the number of hits represents twice as many matches as the range itself (i.e. the range of limits from 40-60 (20% of the possible confidence indexes) produces 40 hits in 100 tests (thus producing 40% of the winners) you are doing well. Again, like I've not said it enough, you want to find a small range of confidence indexes that produces a large number of the winners for each pick.

It is important, at this point, to make it very clear that what works well for one pick may be totally useless for another. Also, you'll most likely find that the first and last picks in the game tend to clump the confidence indexes closer together and higher in rank than those in the middle. Therefore, the limits you use will tend to be closer together for the first and last pick than for the middle picks.

Once you've settled on the limits and methods that seem to work best, set the limits for each pick in the self test to the ones you think are best and run the test again. This time you'll see that the Limits table will show you missing some of the plays. For example, using lotto as an example, you'll match three, four or five numbers more often than you match all six. This is expected. The arrangement we are looking for is a set of limits that consistently gives you a small list of numbers to pick from while still getting enough matches for you to win a cash prize. i.e. If you can limit LottoMan's list of suggested numbers to just four, or so, numbers for each pick and match three, four, five or six of the winning numbers a total of 75% of the time, your in good shape. If, on the other hand, only a few percent of the total games would have produced winning tickets, you need to re-evaluate the limits you are using.

I should point out, again, that you are making a *big* mistake if you are expecting LottoMan to suggest the numbers in the correct order. If you've not already read that point somewhere, you've skipped the number theory topic and need to go back and read it before you continue. Looking at the By Pick option's results in the limits table, you will find the number of winning tickets much lower than using the Any Pick option. As has been said before, you should expect this result and you should plan on picking your numbers accordingly.

At any rate, when you've set your limits and re-run the self test, look over the limits table using both options. The better the program does at getting the numbers in the right order, the better still it will do at getting them right in the wrong order. There is also some useful information to be gained from the By Pick option aside from the fact that it isn't as good as the Any Pick option. That is, how many does the program usually get in the right order? This you need to know in order to know how many of the numbers you pick from the list of suggested numbers should be in the "wrong" order.

Along the same lines, don't ignore the places where it could be said that LottoMan is really "bad" at being "right" in it's predictions. It is very important that you understand that being bad can be good. Or, in other words, what doesn't work is every bit as important and meaningful as what does work. If the program never gave the winning number a confidence index above 80 or below 20 using one method or another, we can, without prejudice, throw away every number that gets a confidence index over 80 or under 20. The fact that no winning number had that index does not mean that no numbers were assigned that index and that is the key to success. The more numbers we can say can not be drawn, the fewer numbers we must choose between as draw able and the better our odds of being right.

If, after you run the self test, you find that there are a huge number of draws that matched all of

the picks relative to the few that didn't, you can almost bet that the list of suggested numbers for each pick must have been pretty long. While the odds may still be better than guessing, they are likely to be fairly steep. You should narrow down the upper and lower limits and run the test again. If, on the other hand, there are almost no winners (even in the Any Pick view), you have made the range between your limits too narrow or in the wrong range of indexes altogether. In this case you should look at your graphs again and be sure the range encloses the majority of the winning confidence indexes and/or make the range a little wider (raise the upper limit and/or decrease the lower limit). Again, remember that you should expect to use a smaller range between limits for the outside picks and a wider range for the inside picks. This is not a hard and fast rule, however, I've found that a set of limits which produces six matches in the correct order (By Pick) in around 3% of the tests and 10%, or better, in the wrong order (Any Pick) is a good balance between an acceptably short list of suggested numbers and a fair chance of the winning numbers being suggested within that list. I should also note that this "setup" will, typically, contain all six winning numbers in the combined list of suggestions in one out of every two games.

There is one possibility that LottoMan can not handle on it's own. For this solution, you will have to step in and use your ability to do a bit of abstract thinking to solve the problem. This is a case where LottoMan is very good at predicting the first pick using one method, the second pick using some other method and so on. Try as I might, I've not been able to come up with a reasonable way for LottoMan to handle this situation, and frankly, I believe that this is probably the case for most lotteries. All I can suggest here is to try using combinations of methods for different picks as they appear to work in the self test. For this to work you pretty much have to use the By Pick option and determine what method most consistently gets the first pick right, what works best for the second, and so on. This is likely to represent a fair amount of work and is, of course, entirely up to you to tackle if you like. If anyone can suggest a usable "rule" for getting the computer to do this, I'll be happy to plug it into the program for you.

Putting it all together, you want to keep running the self test until you arrive at a set of limits and methods that consistently produce winning tickets (not necessarily jackpots, just cash winning) more often than not from as short a list of suggested numbers as you can manage. It may be that you can whittle the first and last picks down to a list of two or three numbers while the inside picks produce a list of ten or fifteen numbers. It will still be much easier to get a winning ticket out of that list than one where every pick is offering up ten or more possible numbers. Think back to the discussion on number theory and how odds are calculated. The more numbers from which you must choose, the harder it will be to be right. Just adding one number to the suggestion list can add thousands of new combinations to the list of possible combinations. I would expect it to take a few days of playing with the self test before you settle on a set of limits and methods that work well. However, once you've done it, you'll be in good shape to start putting money into the lottery. How well you do will depend entirely on how much effort you put into learning the nature of the game and seeking out the set of options that work the best.

One last word concerning the limits and methods you use. As LottoMan matures, it will ship with complete lottery databases for more and more states. When you use one of these predefined databases, it will most likely have a set of limits and methods already defined for each game. Do not expect that these settings are the best or that we are suggesting you use them. These settings are most likely the last ones set by who knows who and may or may not be worth a hoot. Test a set of limits and methods well before you use them., Do not accept what was set when you got your database as useful. Prove it to yourself.

An example on using the self test...

It seems that many people have a hard time getting a handle on the self test. The following is an excerpt from a conversation between myself and a LottoMan user on CompuServe. It is an attempt to clear up some questions about the self test. If you're feeling a little lost, look it through and see if it helps clear the haze a bit.

Scott,

" In brief, the idea is to run the self test and develop a set of upper and lower limits and the calculation method(s), to use for the game, which produce the best results. Once this is done, set the upper and lower limits for each pick in the main window of the program."

This is where I am missing the boat. I can't seem to make the connection with the graph in the self test screen and picking limits. Can you 'walk' me through the interpretation of a screen using Virginia as an example. How do you describe a screen for one of the games, using 0-100, and then how do you describe what you see for a 20-80?

John

John,

Yipper. I figured if there was any one place that users were going to struggle it would be in interpreting the self test... that's why the volume of text on number theory and the self test. Guess I'm still missing the mark.

There are, obviously, two pieces to the self test results. There is the limit table at the bottom and the confidence index graph at the top. The limit table is the easiest to describe and understand, so I'll cover it first by discussing what the three ordering options are doing and how that relates to the limit table. As you asked, I'll do this all in relation to Virginia's Lotto, six numbers between 1 and 44.

First, understand what the self test is doing is to perform the numerical analysis on a group of past winning plays to see how the program would have performed about the winning play that followed that group. In other words, how well would the program have "predicted" the winning picks for the next draw based on that group of past plays and the limits and methods you have selected. If you use the all data option, the program starts by using the first twenty winning plays to perform the numerical analysis on and to see how well it would have predicted the twenty-first. Then it uses the first twenty-one to check against the twenty second, and so on until it reaches the last play in the database. If you use a fixed number of records, the program does essentially the same thing. If, for example, you choose to use 100 plays as your data size, the program will perform a numerical analysis on records 1-100 to test the "predictions" against record 101. It then uses records 2-101 to test against 102, and so on until it reaches the end of the database. Enough of that.

If you set a lower limit of 0 and an upper limit of 100, the limit table will show every method (every possible combination of calculation methods) as having matched all six numbers. This is what we would expect to happen. As stated in the help file, the limits control which numbers are going to be suggested by the program. If the confidence index assigned to a number by the numerical analysis is (lower limit \leq confidence index \leq upper limit) the number will be suggested for play. Thus, if the lower limit is 0 and the upper limit is 100, all number would be suggested and, obviously, every method will match all six numbers regardless of whether we use by pick, any pick or all data.

So why even run the self test with this pair of limits? There are two reasons. First, and most important, if I told you to use the limits 25 and 75 it would almost certainly bias your view on what limits to use. Its a subtle, subconscious, thing that would most likely skew your selection of the right limits to use. By having you run the self test, the first time, with these limits, I am forcing you to look at the results with an open eye. Second, these limits cause the results of the graph to be the same for either pick view of the results (by pick or any pick). With these limits set, the ordering options have no differences between them.

So what's the deal on the ordering options? There are, essentially, three ways you can "use" the numbers that the program is suggesting you play. The first, and most restrictive, is to treat the

suggestions as ordered numbers. That is, the numbers suggested for the first pick will be used only for the first pick (this view actually applies best to games like the daily pick 3). Either the winning numbers in the next draw will not be sorted, or, the numbers will appear in the same order you picked them after sorting. For a game like lotto, this would mean that the numbers I pick for pick 1 through 6 would have to follow the rule pick 1 < pick 2 < pick 3 < pick 4 < pick 5 < pick 6. The second option, any pick, applies best to games like lotto or to playing the pick 3 and betting on any order (as opposed to in order) or making the 50/50 bet where you win more if they are in the right order but still win if they are not. In this case, the program will test every possible combination of the winning picks (in terms of the order in which they appear) against the lists of suggested numbers to find the combination that produces the most matching picks. In this case we are asking the question of how many different lists of suggested numbers suggested one of the winning numbers without more than one winning number coming from the same list. The last option, any data, requires only that each winning number fell between the upper and lower limit for one of the picks.

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For example... If the winning numbers were 1-5-9-13

Pick 1 suggested 3 5 8 11 Pick 2 suggested 1 5 7 14b Pick 3 suggested 4 9 0 13 Pick 4 suggested 8 12 15 19

The by pick option would have matched two numbers, the 5 in pick two and the 9 in pick three. Any pick would have matched three numbers if it used the order 5-1-9-13, matching the 5 in pick one, 1 in pick two, 9 in pick 3 and leaving 13 in pick 4 (note: 13 was in pick three but the list can not be used twice). Any data would have matched all four, matching 5 in pick 1, 1 in pick 2, 9 and 13 in pick 3.

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Now, let's assume you have a pair of limits other than 0 and 100, say 50 and 75. The limit table will now show you how many games suggested all 6 winning numbers, five of them, four, etc. using the ordering rules I just described. In other words, if you picked all of your numbers from the list of suggested numbers, using these limits, how well you might have done. The idea, as we play with the limits is to "push" the matches up toward six. We want to induce the program into regularly suggesting numbers that would produce winning tickets (that's obvious, I guess). The more games that produce three, four, five or six matches the better. I'll come back to this after I cover the graph.

OK, on to the confidence index graph. What this graph is showing you is how many times the winning number for the given pick (using the selected calculation methods and ordering option) was assigned a given confidence index. If I use the by pick option and aging and delta and I'm looking at pick one, the graph will show me how many times the winning number for that pick was assigned a confidence index of 100, 99, 98, etc. down to a confidence index of 0. In other words, the graph is a picture of what confidence indexes assigned by pick one's analysis work best for pick one using aging and delta. Using the example above, this would mean the confidence index assigned to the number 1 in pick one, five in pick two, 9 in pick three and 13 in pick four. If, on the other hand, I use the any pick option, the graph will show me what confidence index that was assigned by pick one's analysis to the number that the program matched to pick one's list. Again using the example above, this would mean the confidence index assigned to the number five in pick one since that was the number that was "matched" to pick one, assigned to one in pick two, nine in pick three and thirteen in pick four. Any data works the same way as any pick in this case. Here the graph would show the index assigned to five in pick one for pick one, assigned to one for pick two and assigned to nine and thirteen for pick three. Pick four would not have displayed a data point for this draw since no number was matched to it.

Thus, in a nutshell, what you are viewing (regardless of the ordering option, method or pick being viewed) is a picture of what confidence indexes are most often assigned to winning numbers for each pick. This is the information we need to decide on which limits to use and which methods to

use. We can look at this graph, decide on a range of confidence indexes that seem to produce the most winning numbers for that pick and use that range as the upper and lower limits. Once we've picked those limits we set them in the self test and run it again. When the test finishes running we look back to the limits table to see how well those limits did in producing lists of winning numbers. If, after running the test, the limit table shows many games with 3-6 winning numbers and (preferably) no games with 0-2 matches, we know that every time we run the number wheel the list of suggested numbers contains a winning ticket.

Enough theoretical discussion... onto the example you requested. Run the program and load the Virginia Lotto game. When it has loaded the game, select the View/Self Test option. Set the number of data records to 321 (to help file readers... the idea here is to generate 100 tests, since the database you have is more current than the one John had, the numbers are going to be a little different) and all of the upper limits to 100 and lower limits to 0 then start the self test by clicking Go. When the self test is finished running, click on the Trend method option and click on Pick 4. Look at the graph and notice how flat it is and how many times it has given the winning number a confidence index of 0 (roughly 27 out of 100 times). The fact that the graph is so flat means that this method seems to assign all confidence indexes to the winning number with equal frequency. In other words, it does not seem to have a region of indexes that are more frequent than any other. In short, this method is useless for picking numbers for pick four.

Now select just the frequency method and pick three. Notice how the confidence indexes tend to cluster between 38 and 59. Set the upper limit for pick three to 59 and the lower limit to 38 and click pick 3 again. Notice the analysis section on the right side now says that 52% of the winning number for pick three fell within this range of confidence indexes. Since confidence indexes run from 0 to 100, the range 38-59 accounts for 21% on the confidence indexes yet produces 52% of the winning numbers. This is the sort of information we are looking for. Here is a narrow range of indexes that produces a broad range of winning numbers. If you go back and look at trend only, now, you'll see that same range of limits for pick three only produces 25% of the winning numbers using that method. Obviously a big difference and we're far better off using frequency than trend in this case.

Go back to frequency, only, and look at pick 1. This graph is **real** interesting. First, 19 out of 100 games the winning number had a confidence index of 100 (19% of the games). Second, it has **never** given the winning number a confidence index between 79 and 99. That is **very** important to know. Using that information I **know** that I can ignore any suggested number for pick 1 with a confidence index of 79 to 99. Aside from those two bits of information, the numbers tend to cluster between 52 and 63. Set the upper limit for pick one to 63 and the lower to 52 and click pick one again. You'll see that this range accounts for 27% of the winning numbers. Add to that the 19% that were assigned a confidence index of 100 and 12 of the 100 confidence indexes (12%) account for 43% of the winning numbers.

Go ahead and set the limits for the remaining picks as follows... pick 2 38-65, pick 4 30-50, pick 5 80-100, pick 6 76-100 and run the self test again. When the test is done running, look at the limits table under the F column (frequency column) and you'll see that one game matched all six numbers in the correct order, 47 games matched three or more in the correct order... a winning ticket. Thus, these limits would produce winning tickets through the list of suggested numbers in 48% of the games. Remembering the rules of ordering and the interesting note about pick one mentioned above. I could use this information to pick numbers from each list of suggested numbers so that I played every combination from that list where pick 1 < pick 2 < pick 3 < pick 4 < pick 5 < pick 6 and the confidence index for the number chosen for pick one is not between 79 and 99 and win something 48% of the time.

Click on the any pick option and look at the table again. Now all six the numbers have turned up twice and 96% of the games offered numbers that would produce a winning ticket. The rules here are a bit more difficult, however, since I can't use the order the numbers are suggested in as above. I would also like to see more than two games offer all six winning numbers. If you look at the analysis for each pick, you'll note that pick 1, 4 and 6 are producing far few matches than the remaining

picks... typically on the order of 40% or less versus 50% or better for the other picks. Pick one, in particular, is bad. If you look at the graph for pick 1 you'll note there is a nice cluster of hits between the limits of 52 and 63, however, we've lost all those hits at 100 since they are outside the range. Increase the upper limit for pick 1 to 100. Now go look at pick 4 using By Pick and you'll see there are two clusters there, one between thirty and fifty (the one we're using) and a second between 65 and 90. Since we aren't doing real well with the first group, set the limits to 65 and 90 so we can try the second group. Looking at pick 6, I'm not sure what to suggest so let's run the test again and see what the changes we made do to the result... In this case the change in pick four hurt the results, so we know the first of the two groupings was best.

At any rate, this process of examining the graphs and adjusting the limits continues until you can come up with a set of values that seems to perform well. BTW: Using frequency does not produce the best results, it just produced easy to see groupings for the purpose of discussion. Set the following limits and run the self test again... pick 1 50-80, pick 2 40-70, pick 3 38-68, pick 4 28-58, pick 5 45-75 and pick 6 50-80. Now if you look at the results for ADF using any pick you'll see 11 games matched six picks, 50 matched five and 27 matched four. So 88% of the games contain a cash winning ticket and virtually 100% of the games are winning tickets. So there is a 10% change that all six winning numbers are presented in six different picks.

Also, if you look at the Any Data option you'll see that 50% of the games contain all six winning numbers in the combined list of suggested numbers. If you put together all of the suggested numbers for all six picks, you'll find that there are typically around 30 numbers in the list. This means that the odds of picking a single ticket, from the combined list of suggested numbers, that matches all six winning numbers are roughly 1 in 593,775 in 50% of the draws. A major-league improvement over the 1 in 7,059,052 odds the game offers.

I hope this has cleared it up some. If not, holler and I'll try again ;-)

Scott.

Scott,

Got and installed the latest update. Now, back to making this sucker work <G>.

1. Start program and load Virginia Lotto
2. Go to Self/Test. (You said to set number of data records to 321, but did give me any explanation as to why to use 321 rather than Use All.
3. I see how you use the Frequency Analysis to set a selection range for Pick 3. Is this just a matter of looking at each of the four graphs, and seeing if one of the four gives a definite cluster effect? (How about combinations of two types of analysis at once, and three at a time?)
4. OK, I'll now try to follow this through for ADF with the limits you suggested.
5. Am still working on getting more results for California Lotto, so should be ready to actually try it when I understand what I am supposed to be doing.

John

John,

"(You said to set number of data records to 321, but did give me any explanation as to why to use

321 rather than Use All"

No better reason than that this will result in 100 actual tests which makes it very easy to see the resulting "percentages". Using a fixed number of data points means that records 1 to N will be used to perform an analysis and test against record N+1, then records 2 to N+1 will be used to test record N+2, 3 to N+2 to test N+3 and so on. Using the Use All option will use records 1 to 20 to test record 21, 1 to 21 to test 22, 1 to 22 to test 23, 1 to 23 to test 24 and so on. I, for no particular good reason, prefer to use a fixed number of records in the analysis.

" Is this just a matter of looking at each of the four graphs, and seeing if one of the four gives a definite cluster effect?"

Actually, it is a matter of looking at all sixteen graphs. I picked frequency only because it was the one that produced the easiest cluster to spot... for example purposes only. In general, I go through all of the graphs for the middle picks to find the ones that seem to have the best clusters and then look at the other picks for the methods that worked best in the middle. I am trying to settle on a group of calculation methods that are clustering the confidence indexes, at least to some degree, in order to gain an edge with the "predictions" the program is making. Once I've found the set of methods that produces that sort of graph, I set limits as described in the last example message and retest.

Sometimes after I retest, I'll find that a different set of methods actually performs better with the limits I set. When this happens, I'll switch to those methods and fine tune the limits for the new set of methods. Think of the self test as an evolutionary process where you're forever trying to home in on a better and better set of limits and methods for the game you're playing. As time passes and you gain more experience, you'll find yourself going back and experimenting more. Heck, I wrote it and I'm *still* tinkering with the self test when I can spare the time.

"(How about combinations of two types of analysis at once, and three at a time?)"

There is no difference in how you use the self test for a single method or any other combination of methods. The question you are trying to answer is what one (or more) methods produce the best results and what upper and lower limits work best with that (those) methods.

" Am still working on getting more results for California Lotto, so should be ready to actually try it when I understand what I am supposed to be doing."

I was kinda hoping things would be easier to accomplish than this. I have the feeling that the program is overwhelming you and I was trying hard to avoid that. I'm quite open to suggestions on what I might do so close the gap once you have figured it out. i.e. When you put the pieces together, I'd really like to know what I could have done to have made it less painful for you. Of course, a serious view of something as complex as a lottery can't be but so easy, but I had thought I had a good handle on it. Typical case of the programmer's syndrome I guess... of course it makes sense... that's why I wrote it that way! <grin>

Scott.

Scott,

Well, I am finally getting a feel for how the program works. Part of the problem has been that I have been so busy that I haven't had time to really work it over.

I tried something last night that seemed to make some sense. I set the limits to 10-90, and then looked at the limit table in Self-Test. The methods that showed good results, I then looked at in more detail. Any

thoughts about this procedure?

Will keep trying it out.

John

John,

" I set the limits to 10-90, and then looked at the limit table in Self-Test. The methods that showed good results, I then looked at in more detail."

That will work, however, which methods seem to work best will vary depending on the limits you choose. Just the same, it is as good a starting point as any other. Just keep in mind that the end result you are aiming for is a set of methods and limits that consistently produce winning lists of suggestions while not making the lists so long that there is little hope of picking the right numbers from them.

"Well, I am finally getting a feel for how the program works."

Glad to hear that you're making the connection... now all we need is to see you win some cash ;-)

Scott.

Using The Vector Analysis



Stop

If you haven't already read the [number theory](#) topic you should read it before reading this section. You might also read the [self test](#) topic for an understanding of the parts of the self test window, the options available, etc. As with the [number theory](#) topic, you may want to print this one in order to get the most out of it.

Statistical analysis is, mostly, a look at the static nature of the lottery. In other words, "How often does a given number appear?", "What is the average age of each number before it appears again?", etc. There is another side of the lottery that is very much worth looking at and that is its dynamic behavior. i.e. How does it tend to move from one draw to the next? If it goes up one time, what is it likely to do the next time? If it moved two points in the last two draws, how many points is it likely to move for the next draw? The vector analysis option addresses these questions.

A vector is the mathematical term for an object that is made up of both a direction and a distance. A particular instance of a vector will also have an origin, or, the point from which it is drawn. Thus, without wandering off into a discourse in vector analysis, if a vector has an origin of three, a direction up and a length (distance) of four, the other end of the vector would be at 7. If the vector's direction was down, the other end would be at -1. If two vectors have the same distance and direction but different origins, they are still considered to be equal.

The lottery you are playing can be viewed as a collection of vectors. If the first draw resulted in a three for pick one and the second draw a five, the difference between the two describes a vector with its origin at three, a direction of up and a length of two. While this might all seem a bit confusing, the point is that aside from evaluating the individual numbers that make up the history of the lottery, we can also evaluate the vectors that are created between each pair of numbers. This information can tell us what direction the pick is likely to go for the next draw and, perhaps, how far we can expect the pick to move.

If we look at the last two winning plays in the lottery, we can find an origin, distance and direction between the two as just described. We can then search through the entire history of the lottery for each time that one or more of these values appears and look at what happened next. That, in turn, serves as a fair indication of what we can expect the lottery to do next. If, for example, the lottery moved up 12 points (i.e. from 6 to 18) for the first pick in the last draw and the analysis shows that 80% of the times the first pick has moved that far up, it has moved down in the next draw, we can choose only those numbers which are less than the last draw (i.e. less than 18) and be 80% certain that the next draw for pick one will be one of those numbers. Likewise, if we look at every time the lottery has moved up three times in a row and find that in 75% of those cases it moved down on the next draw, we can, again, choose only from those numbers less than the last draw with a fair degree of certainty.

The vector analysis option provides all of the tools required to perform this sort of analysis of the lottery and you needn't know anything more about vectors than what you've been told here. The following simply describes what each of the options means in relation to what you've already been told and how you might interpret the results.

The vector analysis window provides a graph and two gauges in the top portion of the window. The graph is used to show how far the picks have moved in the past and the two gauges show what percent of the picks moved up and what percent moved down. The difference between the two gauges is the number of picks that were followed with the same numbers. i.e. If the up gauge reads 80 and the down gauge reads 15, 80% of the past draws moved up on the next draw, 15% moved down and 5% were followed by the same number (didn't move up or down). The movement graph corresponds to the distance portion of the vectors and the up and down gauges the direction. The direction and distance are always taken from the last number drawn for each pick which is the same

as the origin for the vector.

Prior to running the vector analysis you need to determine what parts of the vectors you are interested in evaluating. There are three options provided for this, the Distance, Direction and Position check boxes. Again, these correspond to the distance moved from one winning pick to the next, the direction in which the movement was made and the value of the last number drawn. When the program runs the analysis, it will only evaluate the vectors which match the properties you have checked. In other words, if you only select the direction option, the program will evaluate every vector that moved in the same direction as the last one in the database. On the other hand, if you select both direction and position, the vector will have to move in the same direction from the same position to be evaluated (i.e. if the lottery moved down to three in the last draw, only those winning picks that move down to three from some higher number will be evaluated). You can use any combination of these options in performing the analysis.

Aside from what parts of the vector you are interested in, you can also select how many consecutive vectors, between one (1) and twenty (20), have to match in order for an evaluation to be performed. In brief, if you set a value of three for the depth, the program will search the entire database for every case where the same conditions as presented by the last three draws are repeated and evaluate only those that match those combined conditions. i.e. If the last four values for pick one are 4-9-2-7, then we have three vectors up 5 from 4, down 7 from 9 and up 5 from 2. If you selected the direction and distance options, the program will search the database of past winning picks for every case where three consecutive picks moved up 5, then down 7 and, finally, up 5. When it finds a set of picks that match these conditions, it records what direction and how far the pick moved for the draw that followed. In other words, the depth option defines how many consecutive draws are to be evaluated in determining what is likely to happen next. In general, the more depth you use, the more meaningful the vector analysis will be. However, the more depth you use the fewer samples the program will find in your database which match the required conditions and, therefore, the less reliable the results. As a rule, you should place a very limited amount of confidence in any test with fewer than 20 samples. Try to stay around 50, or more, matched samples for meaningful vector analysis.

Once you have determined which methods to use and how much depth you want to evaluate, click the Go button and the program will, quickly, do its thing. As soon as the analysis is completed the graph and gauges will be updated to show the results for the currently selected pick. To view one of the other picks, click on the pick you are interested in seeing. If you find yourself with fewer than 20 samples, lower the depth by one and try again. If you find yourself with hundreds of samples, you might want to increase the depth.

The gauges on the upper right of the windows are the easiest to evaluate. They quickly point out the empirical odds of the next draw moving up or down for the currently selected pick. The higher the percentage, the more sure you can be of the next draw moving in that direction. More often than not, if you add the two percentages shown, the combined odds of the next pick being higher or lower is not 100%. The missing percentage points belong to all the matches that resulted in the next number being the same as the last (these could be said to have moved sideways). This information indicates which side of the last number drawn you should expect to find the next number drawn and, thus, will often permit you to eliminate an entire range of possible values for each pick.

In general, if the odds are 50/50 for up or down, the analysis hasn't helped you much, however, if the odds of going up are 75%, there is only one chance in four that you would be wrong if you only bet numbers higher than the last draw for the pick you are viewing. Given that knowledge, it remains to find out which of those numbers are best. The graph on the upper left of the window provides the information you need to arrive at that answer.

The graph is organized from left to right from the largest movement in the negative direction, relative to the last winning pick, to the largest movement in the positive direction. The results are displayed as a percent of the total matches. Thus, the graph is showing you what percent of the time

the lottery has moved a specific number of points from one draw to the next according to the most recent behavior specified by the options and depth you selected.

This information can be used to select what numbers to play for the next draw by looking at what number was drawn last and what movement you can expect. If, for example, there are 100 samples and the graph over -1 reads 20, over -5 reads 10 and +4 reads 15, then in 20% of the matched samples, the pick moved down 1 point, 10% moved down five points and 15% moved up four points. If the last number drawn for the pick was 12, then there is a 20% chance the next number will be 11, a 10% chance it would be 7 and a 15% chance it would be 16 based on the empirical evidence. Playing the three numbers 11, 7 and 16 would combine to empirical odds of a 45% chance of being the next winning pick. However, if 80% of the past draws moved up, you could play only the 16 since it is the only one of the three greater than the last draw of 12. And, in fact, the odds for the 16 would be greater than 15% since that represents the odds relative to all past movement while we are only considering the movements in the positive direction.

There is one thing you need to keep in mind when looking at the graph. Technically, the distance (or length) of a vector is an absolute number. That is, it has no direction. However, the graph does show movement and direction together (positive and negative movements are equivalent to up and down movements). The reason for this is that the movements might be misleading if you were only going to pick numbers that moved in one direction or the other. If, for example, 20% of the matches moved down four, 5% moved down 2, 3% moved up four and 35% moved up 2 and we showed the movements as absolute values, we would say that 23% of the matches moved 4 and 40% moved 2. That might lead you to choose a movement of four in the up direction or two in the down direction. However, since only 3% of the matches moved up four and 5% moved down 2, those would not, in fact, be good selections. You would probably be better off picking the two or three most common movements in the positive direction or negative direction depending on which way you thought the pick would move next. If you weren't sure which way the pick was likely to go for the next draw, you might choose -4 and +2 which would combine to represent 55% of the past matches.

The key to the vector analysis is to understand, first, that it is only telling you what has happened in the past based on the recent behavior and the options you select and, second, that this analysis is subjective. However, combining the information shown here with the suggested numbers and a bit of clear thinking should greatly improve your performance in the lottery. In general, I would suggest you work with the self test and settle on a set of methods and limits that work well. Then run the vector analysis and do your best to determine which direction each pick is likely to move for the next draw and how far it might move. With that information in hand, go ahead and run the number wheel. Using the information gathered from the vector analysis, select those numbers in the suggestion lists which match up with the direction and distance you are expecting for the next draw and use those selections to generate your plays.

Picking Your Numbers



Stop

If you haven't already read the topics on [number theory](#), [vector analysis](#) and using the [self test](#), please go back and read them before continuing with this topic.

Armed with an understanding of what a [confidence index](#) is, an intimate knowledge of the history of the game gained from careful examination of the self test, an understanding of what the vector analysis does for you and a burning urge to put a dollar or two on the table for the next lottery drawing, it's time to [pick](#) some numbers to [play](#). Let me start by saying that this is just a suggestion for a way to go about [picking your numbers](#). You do not *have* to do it this way. In fact, I'm hoping that some bright person out there will come up with a way that works better. The point of this topic is to get you started with [LottoMan](#) and to give you some insight into how you might use the information [LottoMan](#) is providing you with to pick numbers.

As a rule, you should pick your numbers in five steps. In the first step, we suggest you print the [historical data](#) graph. The second step is to run the vector analysis and get a handle on what type of movements can be expected for the next [draw](#). The third step is to figure out which numbers should be eliminated. The fourth step is to run the [number wheel](#) and select the numbers to be played. The last step is to finalize your list, generate the plays you're going to make and run down to your local lottery retailer.

Start by selecting the historical data option to display the history graph. Use the right mouse button to [click](#) on this graph and print it. This printed graph will be your worksheet while selecting the numbers to play in the next draw. You'll probably want to print the graph in Landscape mode since that gives you more room to work with. Jot down the actual numbers drawn in the last play at the end of each of the graph's plotted line for each pick and draw a circle around the number. This will let you see, at a glance, what the last number drawn was for each of the picks.

Next, for the second step, run the vector analysis and look at the "predictions" for the movement in each of the next picks. It is my belief that this should be done before you look at the lists of suggested numbers or numbers that should not be played. In this way your interpretation of the results of the vector analysis are unbiased. I jot down the percentages and most common movements for each of the picks using each of the individual matching options on the back of the graph. As a rule, I try to set the depth so that I come up with between 40 and 60 samples to get a fair analysis, when I can't, I play it by ear. With that information in hand, take some time to carefully think over the vector analysis and decide which direction you expect each of the picks to go in the next draw. Place an up arrow, down arrow or simple line next to the circled number on the graph. This represents which way you're expecting the pick to move in the next draw. Also use the last number drawn and the most frequent movements to figure out which numbers are most likely for each pick. If, for example, the last winning number for pick 1 was 5, the most common movements for pick 1 are -4, +2 and +3 and you expect the pick to move up, jot down 7 and 8 next to the circled 5. If you thought it was going down, jot down 1 and if you aren't sure, jot down all three numbers. At any rate, the idea is to decide which direction the pick is going and to figure out what numbers are, thus, most likely to be drawn in that direction. Don't be stingy with the list of numbers and order them from most common to least common.

On to the third step... As previously explained in the topic on [using the self test](#), you should be aware not only of which calculation methods and [control limits](#) work well, but also which methods and limits consistently miss the [winning picks](#). In this step you should set the control limits and calculation methods to those that consistently miss the winning numbers. Once everything is set, run the number wheel. Use the list of suggested numbers to scratch out any numbers in the list you created [using the vector analysis](#). Remember, the numbers the program is now suggesting are the ones you are almost certain won't be drawn. Therefore, if the number appears in the suggestion list and on your

list of calculated numbers (using direction and movement), you know you should not play them. If you have more than one set of limits and/or methods that predict the numbers you shouldn't use, repeat this process for each method. When you're done, close the number wheel without generating any plays.

The fourth step is to set the limits and methods which produce the most accurate list of winning numbers and then run the number wheel again. This time you want to go through the list of suggested numbers and select every one that appears in your list of calculated numbers. To do this, click on all of the numbers you calculated from the vector analysis, and did not scratch out in step three, if they appear in the left hand list for the pick then click on the Add button under the list. This selects all of the "good" numbers for playing. In other words, these numbers represent those that satisfy both your analysis of direction and movement and the programs statistical analysis of the lottery. Repeat this process for each and every pick.

Keep in mind my earlier comments about the program being better at getting the right numbers in the wrong order than getting them in the right order. With that in mind, you should select any and all numbers in the suggestion list that match numbers in your calculated list; regardless of which pick is suggesting them. What you're after is a complete list of every suggested number that matches one of your calculated numbers. You may find that some of your calculated numbers do not appear in the list of suggested numbers. In this case you can either leave them out or manually enter them into the suggestion list. This decision would be based on how likely the calculated number is. If the number accounts for a large percentage of the matches, I would enter it. Otherwise, I would leave the number out of the list.

This brings us to the final step of finalizing the list of numbers we want to play and generating plays from that list. In all likelihood, you will find yourself with several long lists. Keep in mind that the number of combinations of plays is, in general, the number of selections in each list times the number of selections in the remaining lists. Thus, if you have five numbers in each list for a pick six game, there are 15,625 combinations of those selected numbers. Unless you are planning on making a rather large bet, you will have to reduce the rather large number of combinations to some smaller, more manageable, number of plays. There are several ways you might go about this.

First, you might randomly generate play numbers from the list and pick the ones you like from the plays the number wheel generated. If you're going to make a five dollar bet, you might generate 20 or 30 random numbers. Remember that LottoMan sorts unordered lottery plays before putting them into the data table and that the program is far better at suggesting the right numbers in the wrong order than in the right order. Using that knowledge, turn to the list of random plays generated by the number wheel and eliminate every play that put all of the suggested numbers in the same order they were predicted in. i.e. If every number in the generated play is listed in the same pick in which it was suggested, the play is a bad bet. If the program doesn't often get five numbers in the right order, you might then go through the list a second time and eliminate every play that puts five numbers in the same pick in which they were suggested, and so on. In the end you should have whittled the list down to just a few plays. Pick the ones you like the best from the remaining list and play them.

Another approach would be to spend a little time with the list of numbers you have in the right hand lists and eliminate ones you don't "like" for one reason or another in order to shorten the list, then generate every possible combination of the numbers that remain, or, randomly generate a list of plays (as above). You might, for example, eliminate the numbers which represent the smallest percentage of matches from your vector analysis calculations. Or if your intuition is good, you might eliminate the ones that don't "feel" right. In either case, you should go through the resulting list of plays and eliminate the "bad" ones as described in the last paragraph. You are simply wasting your money by betting on the right order plays.

A third approach, the one I prefer, is to use guaranteed win combinations. This permits me to play a large set of numbers as an optimal group of plays which will guaranty that if all of the winning

numbers are in the list of numbers I select, I will win something. For example, a can select 25% of the possible numbers in the Virginia lottery (12 of the 44 numbers) and for \$56 guaranty that I'll at least match three picks if any three of the six winning numbers are in the twelve I picked. Further, if all six winning numbers are in the twelve, the odds are roughly 3.6 to 1 (in my favor!) that I'll match more than three picks or just 1 in 4.2 that I have a ticket with all six numbers! This wheeling method is covered in great detail in the next topic.

There are a whole host of other methods you might use to generate plays and I'm not even going to try and cover them all. Spend some time thinking it over and you might come up with a method you like better than the two I've just suggested. By all means, if you come up with a method you really like, or one that seems to work very well for you, please do let us know. We are always looking for new ways to use [LottoMan](#) and to help our users get the most out of it. If you stun me with a really good one, I'll add it to this help topic for the benefit of the other players.

As a final thought, there are two groups of lottery players who might feel like we've left them out. Those are the players that like to use totally random numbers and those who are into playing birthdays and such. Not to be a spoil sport, but I personally frown on using "favorite" numbers, "lucky" numbers and so on. I have a real bug about these so called psychic hot-lines that offer you your lucky numbers. With all the people who call, how many different lucky numbers get handed out? Is every person's lucky number the same? Only one set of numbers is going to win the game and I just have a hard time believing that every caller is going to be given the right number. Random numbers, on the other hand, constitute about 50% (or more) of the winners in all of the state lotteries that provide them. I'm inclined to believe that this is because very few people are using any form of statistical analysis to arrive at the numbers they are playing, most of the "non-random" numbers being played are people's favorite numbers or numbers they came up with in last nights dreams and have nothing to do with the statistical nature of the game. Thus, the random numbers actually gain a statistical edge over the prefab numbers others are playing. Whether or not I'm right is, no doubt, a topic for a heated debate on one forum or another.

In the first case, generating random numbers, there are two answers. First, most state run lotteries have a means of playing random sets of numbers (Virginia calls it "easy pick", others call them "quick pick"). That is just as good as any other computer's random numbers. If you are set on not using the state's provided random number generator, you can use [LottoMan's](#). To do this, use the Completely Random generation method in the number wheel. This does have the added benefit of automatically entering your quick picks into the program's database.

In the second case, you can easily add numbers of your own picking to any list by using the little [edit box](#) on the top left of each pick in the number wheel. Enter the number you would like to play for the pick and click Add. [LottoMan](#) will put that number in the right hand list and it will also be used to generate plays just like any other number in that list. You can also manually enter numbers into your list of [user plays](#) in the same way you add [winning plays](#) to the database.

In the "for what it is worth" department, unlike most other lottery program's number wheels, there is no limit set on how many numbers you can put in the lists or how many numbers can be generated by the number wheel. The only limits are how many numbers your computer can hold in memory and, therefor, how much memory is in your computer. Each play requires 28 bytes of memory to store while the program is running. Thus, for each one meg of memory in your computer (roughly speaking) you can store 36,500 plays. (NOTE: this is chip memory not hard disk space). If you have at least one meg of free (unused) memory when you run [LottoMan](#), it can generate far more plays that your going to be willing to spend money on <grin>.

Numerical Analysis Options

The numerical analysis options control which methods are used to display rankings and generate the lists of suggested picks. When the recalculation of the historical winning plays is performed, tables are generated for each of the methods and all combinations of the methods. In this way, you do not need to recalculate every time you change the methods you are using. You need only recalculate if you insert, delete or edit winning plays or change the number of selected plays.

Each of the methods performs an analysis of the past history of the game and generates a probability for each number based on the terms of the method. Those probabilities are then ranked from highest to lowest which generates a Confidence Index. Every pick and every method will have at least one number with a confidence index of 100 and at least one with a confidence index of 0. The other numbers will be scattered in-between according to their rankings relative to these two ends. For greater detail on the ranking system, see the Number Theory topic.

You may use any combination of the methods provided in your analysis. To enable or disable a method, click on the Options item in the main menu then click on the method you want to change, or press Alt-O then the underlined letter of the method to be changed. Alternatively, you can click on the method's button in the main data view (shown below). If the button is checked, that method is being used and clicking on it (or using the menu option) will switch it to unused and visa-versa. For more information on the available methods, see the related topics below.

Currently Supported Analysis Methods

<input checked="" type="checkbox"/> Aging	<u>Aging Analysis</u>
<input checked="" type="checkbox"/> Delta	<u>Delta Analysis</u>
<input checked="" type="checkbox"/> Frequency	<u>Frequency Analysis</u>
<input type="checkbox"/> Trend	<u>Trend Analysis</u>

Aging Analysis

The aging method is based on how long it has been since a number was drawn. The higher the ranking for a number, the more recent or hotter it is. In calculating aging information, the program scans the database for each pick looking at when each number was drawn within that pick. During the scan the program builds a table which tracks the number of draws between each hit.

Upon completing the scan, this table is used to determine the median number of draws between hits. Note that this is not the average number of draws. Thus, exactly half the hits will have ages greater than the median and half will have ages shorter than the median. The program then divides the current age by the median age which arrives at a normalized evaluation of each number's current age relative to all other numbers. In other words, the evaluation is based on the number of median ages since the last time any given number hit.

The more recently a given number hit, the higher it's confidence index will be, or, the hotter that number is. Conversely, the longer it has been since a number hit, the lower it's confidence index and the colder it is.

Historically, aging analysis seems to be the best method at locating and forecasting winning numbers for the upcoming draws. You will find that unordered games like the Cash 5 and Lotto type games consistently hit on winning picks that are between a confidence index of 90 and 100 for aging analysis. We suggest you perform a self test using the Any Data option and evaluate limits above 90 for each pick. When you've settled on your limits, use the Combine Pick Lists option in the number wheel to generate your plays.

Aging

Use the aging checkbox to skip the menus

Delta Analysis

The delta method is based on how far numbers move between draws. The higher the ranking for a number, the more common it is accordingly. IN performing this analysis, the program looks at how far each pick moved between the last draw and the draw the preceded it. In other words, if the last draw for pick one was 5 and the one the came before it was 9, the delta would be -4 - the pick moved down four places from 9 to 5. This analysis should be thought of as evaluating the movement of the numbers.

Once the program has determined the last delta, it begins scanning the database for every time this delta has ocured in the past and looks to see what the delta was that followed it. In other words, in our example, if the last delta was -4, the program will find every time a -4 delta appeared between consecutive draws and determine what the next delta was. It then maintains a table which records how many times each delta appeared following the one we are scanning for. Note that this scan is across all picks, not just the pick from which the delta was determined.

When the scan is complete the program converts the recorded deltas into playable numbers. This is done by taking the last winning number drawn for the pick and adding the delta to it. In other words, in our example, the last number was 5, if one of the deltas that follows a delta of -4 was +3, this would translate into the number 8 (5+3). Along with the number, the program records how many times that particular delta appeared. The resulting confidence indexes are then based on how many times each given numberr would have followed the last winning number based on the last delta.

The interpretation iof the resulting confidence indexes is very simple. The highest indexes represent the numbers which represent the highest frequency deltas... the most common deltas. Conversely, the lowest indexes are the rarest deltas. Historically, delta analysis does not work well by itself, it should be used in combination with other analysis methods such as frequency and aging.

Delta

Use the delta checkbox to skip the menus

Frequency Analysis

The frequency method is based on how often numbers appear. The higher the ranking for a number, the more common it is. This analysis method is the most straight forward of all the methods. It represents little more than a count of how many times each winning number has appeared within a given pick. The program scans the database and maintains a counter for each number. Each time the number appears in the pick, the counter is incremented. This analysis is done by pick, thus, the analysis is unaware of how many times a given number might have appeared in another pick.

The resulting confidence indexes will, normally, result in a graph which is roughly a bell curve for unordered games. Historically, this method is not of much use in ordered games such as pick 3 and pick 4 games unless used in combination with another method - aging is recommended. The higher the confidence index for any given number, the more often it has appeared within the pick. Conversely, the lower the index the rarer the number.

It should be understood that frequency, by itself, will not tend to vary much, if at all, between consecutive draws if you're using a data set of any appreciable size. This is due to the fact that the numbers will tend to normalize within each pick... as a straight line in ordered games and a bell curve in unordered games. The primary advantage in using frequency analysis is as a normalizer for other analysis methods in conjunction with unordered games. In other words, if two numbers have the same confidence index through their aging analysis, adding frequency analysis to the evaluation will lend greater weight to the one of the two that appears most often. Thus, the addition of frequency analysis can serve as a tie breaker for other analysis methods.

Frequency

Use the frequency check box to skip the menus

Trend Analysis

The trend method is based on which numbers normally follow the last ones drawn. The higher the ranking for a given number, the more common it is. The program starts by determining which number was last drawn for each pick. It then scans the entire database, across all picks, for that number and records what number came after it each time it appears.

When the scan is completed, the program bases the confidence indexes for the pick on the number of times a given number appeared after the last number hit. The more often a given number followed another, the higher it's confidence index. Conversely, the less often it appears, the lower the index.

Historically, this analysis does not work well by itself in unordered games, though better than others. This is largely due to the fact that random numbers should normalize, over time, to equal frequencies. However, this analysis does work well in combination with other methods as a tie breaker. We suggest using it in combination with aging and frequency. This method does appear more reliable on it's own in ordered games, however is still best used in combination.

Trend

Use the trend check box to skip the menus

Pick Display Options

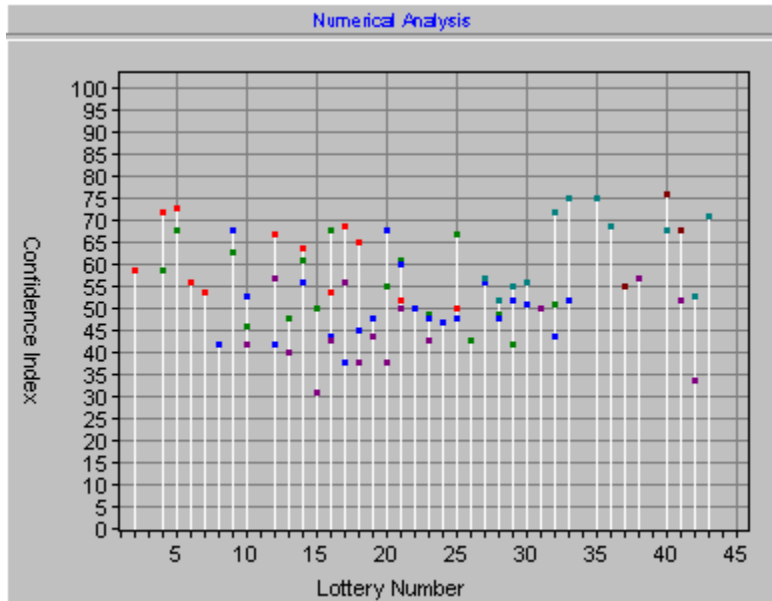
The pick options provided in the Options menu control the display of picks in the graphs LottoMan provides. These options may be set by clicking on the Option item in the main menu then clicking on the pick you wish to change or by Pressing Alt-O followed by the pick number you wish to change. Alternatively, you can change the state of a pick by clicking the button that surrounds the pick name in the main data view (example shown below). If the button is depressed, the pick will be displayed, otherwise, if the button is in the up position, the pick is not displayed. Picks which are not available in the current game will be disabled in the menus and no button will appear in the main data view for those picks. Disabled picks can not be altered.

Enabling and disabling the individual picks may make it easier to see the rankings in the numerical analysis graph and make it easier to see the movement of the individual picks in the historical graph - particularly for games which repeat all numbers for each pick.

Picking Control - Upper Limit / Lower Limit											
Pick 1	100	0	Pick 3	100	0	Pick 5	100	0	Bonus 1	100	0
Pick 2	100	0	Pick 4	100	0	Pick 6	100	0	Bonus 2	100	0

Clicking on the pick name in the above will turn the picks on and off without using the menus. If the box surrounding the pick and it's limits is raised, the pick is not displayed. If it is depressed, the pick is visible. Invalid picks for the current game are not displayed at all, including the pick buttons. Note the colors of the picks correspond to their graph colors.

Numerical Analysis

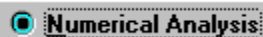


This option switches the graphical display from the historical trends of the game to a view of the analysis for the next game shown below. This graph presents a pictorial representation of the numbers generated by the numerical analysis. Interpretation of the graph is fairly straight forward. Along the left edge from bottom to top are the confidence indexes generated by the program. Along the bottom edge from left to right are the valid numbers for this lottery. The interior of the graph presents the program's ranking of each number according to each pick the number might appear in. Each ranking is displayed in the color assigned to the pick to which it belongs. (i.e. pick one's rankings are red, pick two's are green, pick three is blue, pick four is yellow, and so on)

Each valid number in the game is rated for each pick in which it might appear. Thus in a game such as Virginia's Lotto, each number would receive six ranks since there are six picks in Lotto. The graph will display a vertical line from each valid number and a small square for each rank (Confidence Index) along that line. The higher the rank the better the possibility for the number to be drawn according to the calculation methods being used.

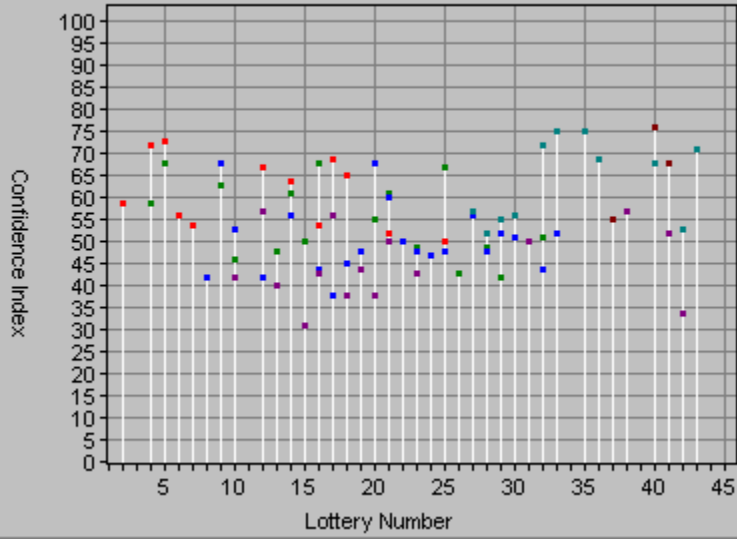
Understandably, this graph would become quite cluttered if every rank for every number were displayed. A set of control limits, an upper limit and a lower limit, are provided for each pick in the game. Any rank for a given number within a particular pick which is greater than the upper limit or less than the lower limit is not displayed. In this way you can narrow down the rankings displayed to those that are of significance for the pick.

You can print this graph at any time by clicking on the right mouse button while the mouse pointer is over the graph. Select the printer you want to send the graph to and, optionally, use the Setup button to change the orientation to Landscape from Portrait. When you are ready to start printing, click on OK. If your printer does not support color, you should probably print the graph for one pick at a time as there is no way to tell which points relate to which pick without color.

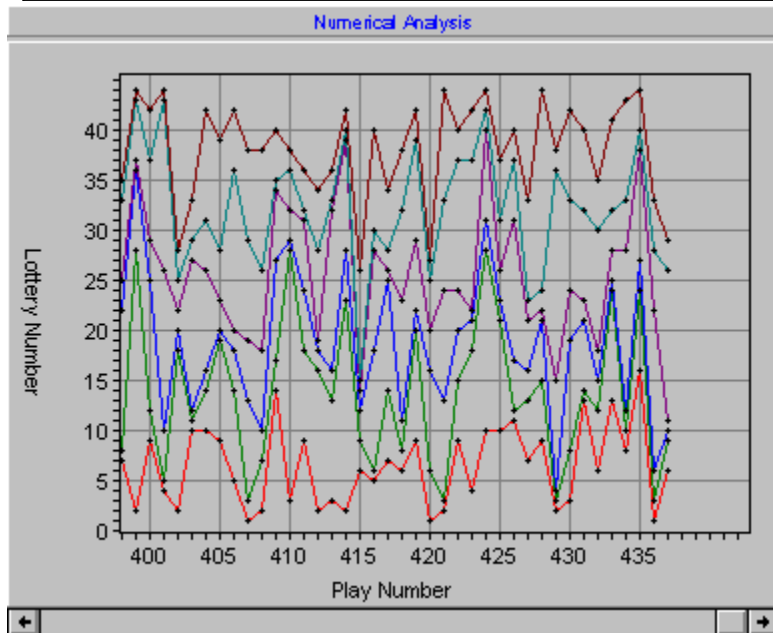


Use the Numerical Analysis button to skip the menu

Numerical Analysis



Historical Data



This option switches the graphical view from the numerical analysis or rankings view to a view of the trends for the current game as shown below. This graph represents the movement of the winning picks over the history of the game. Along the left edge of the graph from bottom to top are the valid numbers for the game. Along the bottom edge from left to right are the play numbers that correspond to the record number in the history table. The interior of the graph displays a line for each pick in the game. The color for each line corresponds to the color assigned to the pick (i.e. pick one is red, pick two is green, pick three blue, and so on). This graph can be useful for spotting trends and predicting the most likely direction for each pick in the next draw. (i.e. if the last three draws have shown the pick to be declining, in all likelihood the pick will rise in the next draw

The scroll bar at the bottom of the graph may be used to pan left and right over the history of the game. The oldest draws are on the far left and the most recent on the far right.

You can print this graph at any time by clicking on the right mouse button while the mouse pointer is over the graph. Select the printer you want to send the graph to and, optionally, use the Setup button to change the orientation to Landscape from Portrait. When you are ready to start printing, click on OK. If your printer does not support color and the game uses the same digits for each pick, you should probably print the graph for one pick at a time as there is no way to tell which points relate to which pick without color. If the game only permits each number to be drawn once per play (as in the example below) this is not an issue and the graph can be printed with all picks enabled. In any case, printing the graph only prints the visible portion of the graph (i.e. the entire history is not printed, only those records which are currently being displayed within the graph).

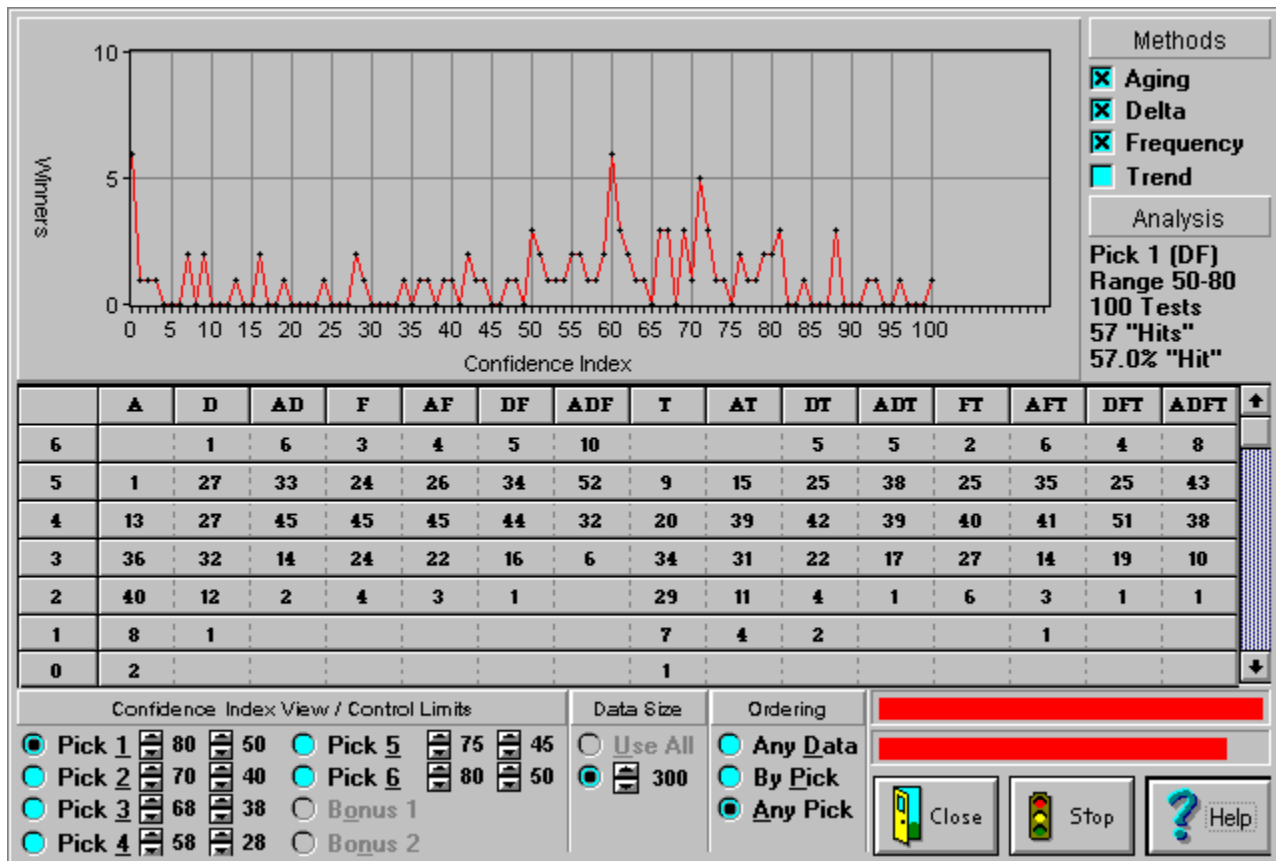
NOTE: When printing this graph on an HP LaserJet IIp with 512K of memory you are likely to experience out of memory errors if you try to print more than two picks at a time. Thus, we recommend you print Pick 1 and 4 together, then print Pick 2 and 5 and, finally, print Pick 3 and 6. This problem is a function of how the PCL printer builds it's images of lines which are neither vertical or horizontal. You can also solve this problem by upgrading your printer to 1 meg or more.

Historical Data

Use the historical data button to skip the menu

Self Test

This option executes the internal self test routine for the current game. After selecting this option LottoMan will remove the main data view window from your screen and display the self test window shown below. This topic is quite lengthy but one that should be read fully and understood in order to get the most out of LottoMan. While the topic does explain the self test mode in fair depth, it does not get down to nit and grit. You should also read the topics on number theory, using the self test and picking your numbers to get the most out of the self test. Clicking the Help button in the self test window will display this help topic. For a description of an individual part of the self test window, click on the area of interest in the example below.



Before you start the self test you need to set it up. The first step is to define the control limits for each pick. By default they will have the same values as the control limits you are currently using in the main data view. The control limits are the two numbers appearing to the right of each pick in the Confidence Index View / Control Limits section at the bottom of the window. The left limit is the upper limit and the right is the lower limit. You can change the values of these limits by clicking on the up or down button for the limit, clicking on the limit and using the up and down arrow keys or pressing tab until the correct limit has a box around it and then using the up and down arrow keys. These values are used to determine how many of the winning numbers for each pick fell within the range of the upper and lower limit, or in other words, how many of the numbers actually drawn the program would have suggested you play. The wider the range between limits the more of the numbers the program will have picked but the more difficult your task would have been to pick the right numbers from the suggested list.

Having set your control limits, the next step is to specify how many plays to use in the analysis for each draw. This is set in the Data Size section at the bottom of the window. If you select Use All, the program will start by using the first 20 plays in the database to perform an analysis for the 21st play. It then counts the number of picks that were matched, etc., and moves on to the next play. For the next play the first 21 records are used to analyze the 22nd play, then 22 are used for the 23rd, 23 for the 24th and so on. Thus if there are two hundred plays in the history database, 199 plays will be used to analyze the last play and 180 total tests will be performed. This method of analysis is equivalent to using every record in the history database to calculate the next draw over the history of the game. To use this method click on the Use All option or press Alt-U.

The second option is to specify a fixed number of records to be used in calculating the next draw. This is the number that appears under the Use All option. In this case, if you select 20 fixed records (the default though not recommended) the program will use the records 1 through 20 to perform the analysis for the 21st draw. Then it uses the records 2 through 21 to calculate for the 22nd, 3 through 22 for the 23rd and so on. Thus for draw number 100 the program would use records 80 through 99. This method is equivalent to selecting a range of records in the history table and pressing the recalculate button. To use this option, click on the button next to the up and down buttons. Then use the up and down buttons to change the number of records or click on the number itself and use the up and down arrow keys or press tab until a box appears around the number and use the up and down arrow keys.

When you are satisfied with the number of data records and the control limits you have set, click on the Go button to start the self test. The two graphs above the Go button will display the progress of the test. The top graph shows each recalculation's progress and the bottom graph the progress of the whole self test.

After clicking on the Go button, it will change into a Stop button. You can stop the self test at any time by clicking this button, however clicking Go again does not pick up where you left off.

When the calculations are complete or you have clicked the Stop button, the program will update the limit table and confidence index graph. This can take a while on slower machines. The progress bars will be cleared as the tables are updated - just to let you know the program is alive.

The top graph is the confidence index analysis (CI) and displays the number of times each confidence index was selected for each pick. Only one pick is displayed at a time in this graph. Along the bottom edge of the graph are the confidence indexes increasing from left to right. These values correspond to the confidence indexes shown in the Numerical Analysis graph in the main data view. Along the left edge of the graph, from bottom to top are the number of times individual confidence indexes were used by winning picks.

The values inside the graph are counts of how many times each index was used by a winning pick. After performing the analysis for a given draw, the program will get the confidence index it assigned to the winning pick for that draw using each possible combination of methods and add one to the number of times that confidence index was assigned to the pick. Thus if pick one assigned a confidence index of 75 to 10 winning picks, the graph will plot a point over 75 (on the bottom edge) that is directly across from 10 (on the left edge). The points are then connected to show a clear image of where the winning picks tend to cluster.

By default, the graph displays the results for pick one. To change which pick you are viewing use the individual pick buttons under the Confidence Index View / Control Limits section. Click on the pick you want to view or press tab until a box appears around the pick and press the spacebar. The graph will update to display the new pick. You will also need to specify which calculation methods you want to see the results for and which ordering method should be used to associate winning picks with the confidence indexes offered by the individual pick's analysis.

The one remaining control for this table is the Ordering options appearing at the bottom of the

window. The default view is By Pick which means that the confidence indexes shown are based only on the confidence index assigned to the winning pick in the same pick "column" when performing analysis, or in other words, the confidence indexes in picks two through whatever that were assigned to the number drawn for pick one are ignored, even though they may have fallen within the range of limits you set. The Any Pick option, on the other hand, will find the combination of confidence indexes that produces the most number of matched picks for the draw and then display the index value used for each pick. Thus the index shown for pick one might be the index assigned to the number for a completely different winning pick. The key here is that each winning pick is taken from a different "column" (i.e. no two indexes came from the suggested number list for the same pick). This method is the most useful and accurate means of picking winning numbers. The program is quite good at picking the right numbers in different columns, it just isn't quite as good at getting them all in the right column. The last option, Any Data, uses the highest confidence index for the winning number out of all of the columns for the draw. This method lets you select a range of confidence indexes and select your plays from the whole list of suggested numbers that result.

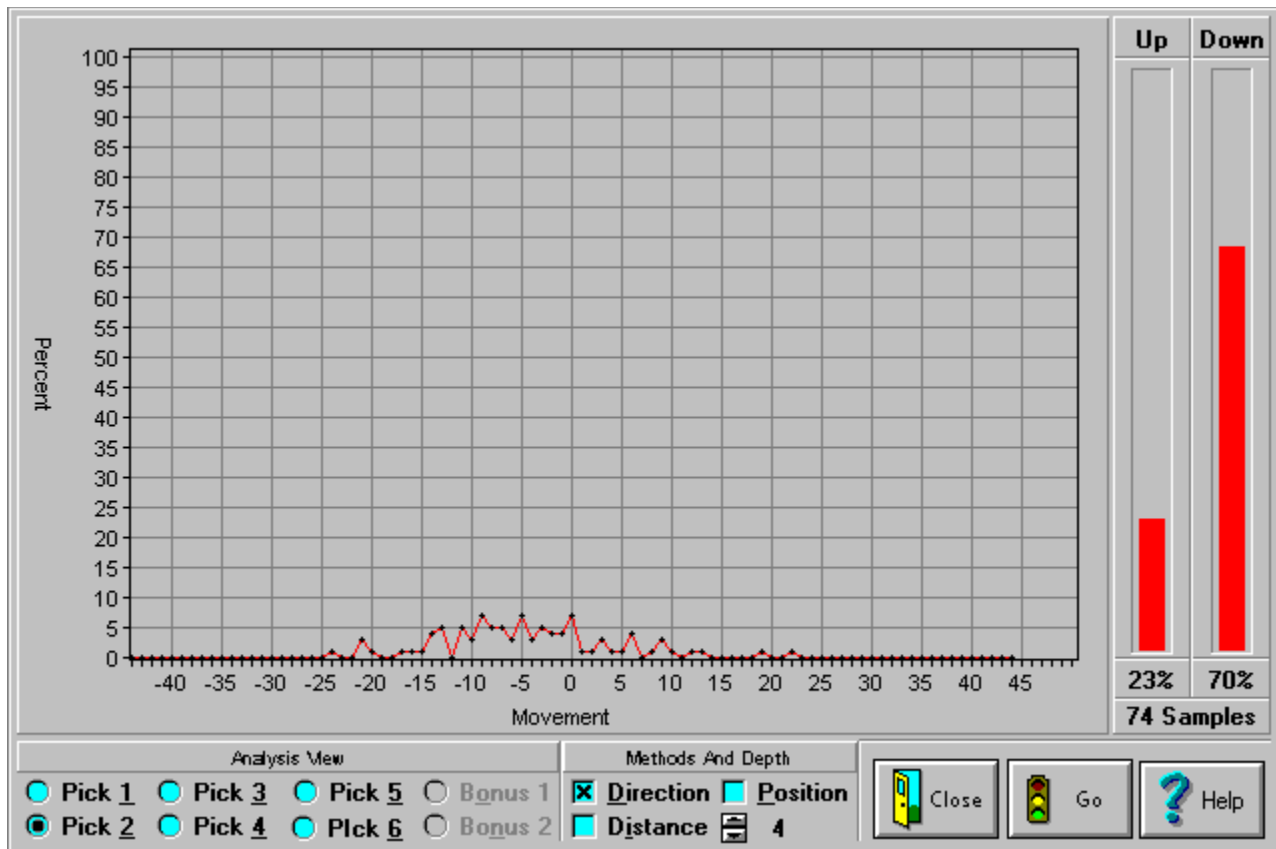
The table appearing in the middle of the window is the limits (LIM) table and shows how well you would have performed over the history of the lottery had you only played numbers that were ranked between the upper and lower control limits you specified for the self test. The individual pick options under the Confidence Index View / Control Limits section do not affect this table, though the limits specified next to them do. The table is modified by the Ordering options.

The rules are as follows... if the By Pick option is used, the winning pick must have been ranked between the limits for the same pick in which it was drawn. Thus pick one's winning number must have been ranked between the upper and lower limit for pick one. The Any Pick option causes the program to find the combination of winning picks and confidence indexes that produce the most number of matches (hits) for the draw where the numbers drawn fell between the limits in at least one of the picks. However, no two numbers can come from the list of suggested numbers for the same pick. See the number theory section for a more descriptive view of this approach if I've lost you. The Any Data option only requires that the winning pick fell between the limits for any pick. This might result in more than one winning number having come from the same list of suggested numbers for an individual pick.

Along the left edge of the table decreasing from top to bottom are the number of matching picks for the draw. A game like Virginia's Lotto would have the numbers six through zero. Along the top edge of the table from left to right are all of the possible combinations of calculation methods. The interior of the table shows the number of draws in which each number of picks fell within the limits according to the Ordering option you are using. Thus a value of 22 for row 5 under AF would mean that in 22 of the draws tested, the combined methods of Aging and Frequency matched 5 of the 6 winning picks, or in other words, the best you would have done using the list of suggested numbers for the draw would have been five matches.

Vector Analysis

This option executes the internal vector analysis routine for the current game. After selecting this option LottoMan will remove the main data view window from your screen and display the vector analysis window shown below. This topic is quite lengthy but one that should be read fully and understood in order to get the most out of LottoMan. While the topic does explain the vector analysis mode in fair depth, it does not get down to nit and grit. You should also read the topics on number theory, using the self test, using the vector analysis and picking your numbers to get the most out of the vector analysis. Clicking the Help button in the vector analysis window will display this help topic. For a description of an individual part of the vector analysis window, click on the area of interest in the example below.



[Using The Vector Analysis](#)

Number Wheel

This option is used to bring up the [number wheel](#) window shown below. The number wheel is provided as an easy means of entering numbers to [play](#) in the next [draw](#). While it may seem a bit daunting at first glance, it is actually quite simple to use. This topic describes how to use the number wheel but does not get into detail about controlling what numbers are suggested or how to choose numbers, etc. For a better understanding of the logic behind these issues, see the [Self Test](#) topic, the [Number Theory](#) topic or topic on [Picking Your Numbers](#). Clicking the Help button will display this help topic. You can get a detailed description of each part of the number wheel by clicking on the area of interest in the copy below.

Run Wheel

Use this button to run the wheel without using the menu.

Pick 1	Pick 2	Pick 3	Pick 4	Play Date
19 24 23 26 21 22		36 37 40 3 4 6	8 10 11 46	11/26/1994
Add-> <-Del	Add-> <-Del	Add-> <-Del	Add-> <-Del	Generation Method
				<input checked="" type="radio"/> Combine Pick Lists
				<input type="radio"/> Combine By Pick
				<input type="radio"/> Completely Random
				Target Combinations
				<input checked="" type="radio"/> Guaranty Matches: 4
				<input type="radio"/> Exhaustive
				<input type="radio"/> Random Plays:
				<input type="radio"/> Custom Wheel
				Combination Detail
				Pool Size: 0
				Combinations: n/a
				Selected: n/a
Add-> <-Del	Add-> <-Del	Add-> <-Del	Add-> <-Del	Close
				Go
				Help

First take a look at the controls for [pick 1](#). There is a small [edit box](#) in top left corner of the control, a list of numbers directly below it on the left side, another list on the right side, as well as, an add and a [delete](#) button below the lists.

The small edit allows you to enter numbers that do not appear in either of the lists. To use this field [click](#) inside the box and enter a number or press tab until the blinking cursor appears in the box and enter your number. Once you have entered the number [click](#) add and the number will appear in the right hand list. Alternatively you can [click](#) on the Del button and the number will appear in the left hand list. (The use of the two list is described in just a moment). Do not press enter after entering the number.

When you select the number wheel option, [LottoMan](#) examines the current [numerical analysis](#) and calculation methods in effect and determines all of the numbers for each pick with a [confidence index](#) that fall within the [upper limit](#) and [lower limit](#) for that pick. It then places each of these numbers in the left hand list (the shorter of the two list). This list represents all of the numbers that [LottoMan](#) is

suggesting you use based on your current calculation settings and they appear in order from the highest confidence index at the top to the lowest confidence index at the bottom. However, these number will not be used to generate plays as long as they are in the left hand list. To use a number from this list, click on it using the mouse and then click on the Add button. LottoMan will take the number out of the left hand list and place it in the right hand list. You can select more than one number before clicking on add if you like.

When the number wheel is first displayed, the right hand list will be empty. This list shows all of the numbers that will be used to generate plays. When you enter a number in the edit or select a number from the left hand list and click the Add button, LottoMan places that number in this list. To remove a number from this list, click on the number to select it and click on the Del button. LottoMan will remove the number from this list and place it in the left hand list of suggested numbers (adding the number to the bottom of the list).

That is all there is to picking numbers to be played. However, it should be noted that you must have at least one number in each right hand list of play numbers in order to generate a play.

In the upper right hand corner of the window is the Play Date field. This date indicates which draw date you are generating plays for. By default it will be set to the next draw date coming up for the current game (this is based on the last draw date entered in your table of winning plays). You can change this field, if you need to, by clicking in the box and entering a new date or by pressing tab until the blinking cursor appears in the date box and entering the new date. Do not press enter after entering the date.

Below the Play Date field are the Method fields. These fields control how LottoMan will use the numbers in the right hand lists to generate plays for the next draw. The Combine Pick Lists option combines all of the numbers in the right hand lists into a single list of numbers and then generates combinations of those numbers. Thus it would be possible to generate a play where every number in the play came from the right hand list of numbers for pick 1. The Combine By Pick option, on the other hand, will generate every possible combination of the individual lists while never picking more than one number from each list for a play. Thus no play will have two numbers from the same pick's right hand list of numbers (unless one of the numbers appears in another one of the lists). The last option, Random Plays, is the same as buying quick picks at your lottery retailer... It knows nothing of confidence indexes, suggestions lists or selection lists. The plays it produces are entirely random.

The next set of options control how many plays will be generated from your selected numbers. The Guaranty Matches option will produce an optimum set of plays which will ensure you match the specified number of picks if at least that many of the winning numbers are in you lists of selected numbers. The Exhaustive option will generate every possible combination of your selected numbers and the Random option will randomly select the specified number of plays from the exhaustive list of plays.

Be careful when using the Exhaustive option. This can easily generate thousands of possible plays. For example, using the Virginia Lottery's Lotto game there are six picks. If you choose three numbers to use for each of these picks and the Combine By Pick option, LottoMan will generate as many as 729 plays from that list. If you used the Combine Pick Lists option LottoMan would produce 18,564 plays. If you want to estimate how many plays will be generate from the numbers you have picked check the Selected: text field.

Understanding The Tables

LottoMan provides a host of tables which afford you the opportunity to view the history of your lottery from all sorts of angles. It is important to understand that lotteries are reasonably random events and, thus, there are limitations on how accurate your forecasts of future draws can be. There is a strong lobby that argues you can not use statistics to "predict" future lottery drawings; all possible combinations are just as likely to occur.

This argument is patently false. There are certain characteristics of each possible number combination which make it quite clear that the odds between each individual combination are not equal. LottoMan's analysis tables provide you a clear look at what is "normal" behaviour for your lottery and a look at when and where these behaviours have appeared in the past.

There are four basic parts of each table. The left edge of the table shows the value(s) to be evaluated. Following the value is a set of three values which show the current age of the value along with the average age and median age and two values showing the current frequency and average frequency. Following these values is historical information visually showing in which draws the value appeared. These four parts of the table are consistent across all of the tables LottoMan provides.

The age of a value is an expression of time in relation to the value and the lottery's draws. Loosely speaking, the more time that goes by since the appearance of any particular value, the more inclined you might be to expect to see that value appear in the upcoming draws. Frequency, on the other hand, is a simple count of how many times any given value has appeared. The more times a value appears, the more common it is and the more reliable the aging information, as well.

In general, the age of any value is nothing more than the number of draws since it last appeared in the lottery. The average age is a measure of roughly how often the value appears. In other words, it is the number of draws divided by the number of times the value has appeared and means that, on average, you can expect the value to appear every X number of draws. Be sure you understand that it does not mean it WILL appear that often; that is only what you can expect as typical behaviour. The median value is similar to the average with the exception that this is the "middle" value. In other words, one half of the previous appearances of the value took longer to appear than the median and one half took less time to appear than the median.

The tables can be an invaluable tool in gaining an understanding of how your lottery behaves and, in turn, to use that knowledge to make intelligent play choices. Generally, you can look at any table and quickly pick out values that have a high frequency and those that have a low frequency. With no further thought on the subject, you can assume the high frequency values are better bets than the low frequency values simply because they tend to appear more often. The best example of this would be the number of odd and even digits in a typical lotto type draw. On average, 33% of all draws will have three odd numbers and three even numbers and 80% will have either 2, 3, or 4 odd numbers. However, less than 5% of the draws will be made up of only odd numbers. Thus, playing combinations of nothing but odd numbers is a bad bet. Thus, frequency is a quick and dirty tool for improving your odds.

Aging is also a useful tool, though less reliable than frequency. One of the premises of probability is that it is nothing more than a measure of what you can expect over the long haul. For example, if you roll a die, the odds are 1:6 for any one of the six sides turning up. This does not mean it will do so every six tosses of the die. Rather, the statement means that after we have tossed the die a few hundred times, we would expect the number 3 to have been the result of one sixth of those tosses. The point of this is that everything should even out in the end. Perhaps not exactly, but close enough for government work.

The point of this notion is that there is a sort of intangible pressure on values to behave in a predictable manner. If, in the end, we expect everything to be equal, the further a value strays from

its normal behaviour, the more it can be expected to correct itself. If, after thirty tosses of the die, we have not seen a three, is it reasonable to expect a three on the next toss. Yes and no. The odds remain 1:6 for any of the possible outcomes, however, it would seem the three is going to have to start catching up sometime.

Beware of this view. It is not reliable, though it "feels" right. The fact that any particular value has grown cold and overdue does not mean that it will appear on the next draw. As I said, the odds are the same for every draw regardless of the history. However, I would still be inclined to be looking for the overdue value in the near future. If I were wheeling a set of numbers, I would include overdue numbers in the wheel. However, I would never dream of wheeling nothing but overdue numbers or betting on nothing but overdue numbers.

In practice, nearly every draw is made up of numbers spread across the band. In other words, some of the values will have appeared recently, others will appear on average and a few will be overdue values. Thus, you should build your wheels accordingly. What aging does do is to let you see what values are hot, which are colds, etc., and thus make more informed choices about your number selection.

As a last word, the history portion of each table shows in which draw number each value has appeared over the history of the game. Depending on the values themselves, it will either show a zero which indicates the value appeared in that particular draw or it will show the actual picks in which the value appeared. This information, too, is important. It allows you to "see" the patterns that may form and to see where certain values tend to appear in the draws.

There is little to nothing I can tell you about using the history to spot patterns. All I can suggest is that with practice and a sharp eye, you may see them when they appear. Don't waste too much effort scanning the history. Think of it as a tool to aid you in grouping numbers into your wheels. If nearly all of your wheeled numbers typically appear in the first, second or third picks, you should expect your selections to be a losing wheel. You need to pick numbers in a way that ensures you have all of the picks covered. This is the value of the history. Use it to learn the behaviour of the individual numbers, not as a prediction tool.

[Basic Table Features](#)

The general tables

[Number History Table](#)

[Associates Table](#)

[Pairs Table](#)

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[Odd And Even Table](#)

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The ordered game tables

[Doubles Table](#)

[Triples Table](#)

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The unordered game tables

[Tens Duplicates Table](#)

[Ones Duplicates Table](#)

[Partitions Table](#)

Basic Table Features

For a general description of each part of the table, [click](#) on the area of interest in the Number History example below.

	Aging Data			Freq. Data		History									
	Cur	Avg	Med	Cur	Avg	332	333	334	335	336	337	338	339	340	341
1	7	10	10	34	42			1							
2		9	7	39	42	1			1						1
3	1	7	6	46	42									1	
4	1	10	12	34	42									2	
5	51	8	5	35	42										
6	4	9	9	36	42				2		1				
7	17	9	7	35	42										
8		8	6	42	42									3	2
9	3	8	6	45	42	2	1					1			
10	3	9	7	38	42						2	2			
11	3	8	6	41	42					1		3			
12	10	7	5	47	42										
13	1	9	6	37	42									4	
14	7	7	5	51	42			2							
15	11	6	5	53	42										

Listing Order: Numerical Hot to Cold

Listing Preference: Med Age Cur Age Avg Age Cur Frequency

Number History Table

The number history table details the history of the individual numbers that make up the lottery. IN the typical lotto type game, these will be values between 1 and 44 or 1 and 49. This information can be used to determine which numbers are hot or cold, the current frequency for each number, which picks the number appears in, etc.

One of the more valuable pieces of information this table delivers is an idea of what numbers tend to appear in which picks. It is important that the numbers you pool for wheeling cover all of the picks in the game. If all of the number you pool only appear in the first few picks, your wheeled numbers are not very likely to be winners since there are no number present that would normally appear in the higher picks.

Basic Table Features

	Aging Data			Freq. Data		History									
	Cur	Avg	Med	Cur	Avg	332	333	334	335	336	337	338	339	340	341
16		9	7	37	42	3	2		3						3

- Value

The value, in this case 16, is one of the actual numbers used in the game.

- Current Age

The number of draws since this particular number was last drawn.

- Average Age

The typical number of draws between appearances of this number.

- Median Age

Exactly one half of the previous appearances of this number took longer than this value and one half appeared in less time than this value. If the number tends to be wild in its appearances, median age tends to be a more accurate measure of "normal" behaviour.

- Current Frequency

An actual count of the number of times this number has been drawn over the history of the game. This count is based on the number of draws in which it appeared and how many times it might have appeared in a single draw has no effect on the frequency. The current frequency is also a good measure of the accuracy of the aging information. The more often a value appears, the more reliable the idea of "normal" behaviour becomes.

- Average Frequency

This value is the same for all numbers and indicates the total number of times all values have appeared divided by the number of values. Generally, values with a current frequency above the average or more common than those with a current frequency below the average.

- History

The history data is broken up into individual columns for each draw in the database for the current game. The index numbers are relative to either the first record in the database or the first selected record if you are viewing a table for a selected block of past draws. The values shown

are the actual pick number(s) in which the number itself appeared In this example, the number 16 appeared in pick 3 in draw numbers 332 and 335, and appeared in pick 2 in draw number 333.

Associates Table

The associates table is a bit off the beaten path in relation to the other tables. Unlike the other tables, this one gives you a view of the association between numbers in consecutive draws. The analysis is based on the last draw in the database or the last draw in your block of selected numbers.

The table scans the history of the game for each number that appeared in the last draw. Each time the number appears, the table examines what numbers appeared in the next draw. A collection of number pairs is built for the number drawn and each number that followed it. In the end, the table shows you what numbers have followed on the next draw for each number that appeared in the last draw. This information can be used to construct pools of numbers that are most often associated with those that appeared last.

Basic Table Features

	Aging Data			Freq. Data		History									
	Cur	Avg	Med	Cur	Avg	332	333	334	335	336	337	338	339	340	341
16-23	8	42	20	8	7		13								

- Value

The value, in this case 16-23, is built of a pair of numbers. The first number is one of the numbers that appeared in the last draw. The second number is one that appeared in the draw that followed any draw in which the first number appeared. In other words, 16 was one of the numbers that appeared in the last draw and in one or more of the past draws in which 16 appeared, 23 appeared in the draw that followed it.

- Current Age

The number of draws since this particular number pair was last drawn.

- Average Age

The typical number of draws between appearances of this number pair.

- Median Age

Exactly one half of the previous appearances took longer than this value and one half appeared in less time than this value. If the number tends to be wild in its appearances, median age tends to be a more accurate measure of "normal" behaviour.

- Current Frequency

An actual count of the number of times this number association has been drawn over the history of the game. This count is based on the number of draws in which it appeared and how many times it might have appeared in a single draw has no effect on the frequency. The current frequency is also a good measure of the accuracy of the aging information. The more often a value appears, the more reliable the idea of "normal" behaviour becomes.

- Average Frequency

This value is the same for all numbers and indicates the total number of times all values have appeared divided by the number of values. Generally, values with a current frequency above the average or more common than those with a current frequency below the average.

- History

The history data is broken up into individual columns for each draw in the database for the current game. The index numbers are relative to either the first record in the database or the first selected record if you are viewing a table for a selected block of past draws. The values shown are the actual pick number(s) in which the number itself appeared and the pick in which the associated number appeared in the next draw. In this example, the number 16 appeared in pick 1 in draw number 333 and the number 23 appeared in pick 3 in the next draw (draw number 334).

Pairs Table

The pairs table displays statistical information for each valid unique pair of numbers in the current game. The listing will not display any pair which has never appeared in the game. The number pairs are listed along the left edge of the table, the statistical analysis in the center and the history on the right side. For a detailed description of each part of the table, [click](#) on the area of interest in the sample below.

If you are fairly confident that one or more numbers will appear in the next draw, you can use the information in this table to fill out your pool with numbers that frequently appear as pairs with the numbers you are expecting. You can also use this information to seed your number pool by selecting among number pairs that are particularly hot or overdue.

Basic Table Features

	Aging Data			Freq. Data		History									
	Cur	Avg	Med	Cur	Avg	332	333	334	335	336	337	338	339	340	341
11-36	3	56	45	6	4					15		35			

- Value

The value, in this case 11-36, is one of the actual pairs of numbers possible in the game. For unordered games like Lotto, these numbers will always appear in order from lowest to highest. For ordered games, they will appear in the same order in which they appeared in the draw.

- Current Age

The number of draws since this particular number pair was last drawn.

- Average Age

The typical number of draws between appearances of this number pair.

- Median Age

Exactly one half of the previous appearances of this number pair took longer than this value and one half appeared in less time than this value. If the number tends to be wild in its appearances, median age tends to be a more accurate measure of "normal" behaviour.

- Current Frequency

An actual count of the number of times this number pair has been drawn over the history of the game. This count is based on the number of draws in which it appeared and how many times it might have appeared in a single draw has no effect on the frequency. The current frequency is also a good measure of the accuracy of the aging information. The more often a value appears, the more reliable the idea of "normal" behaviour becomes.

- Average Frequency

This value is the same for all number pairs and indicates the total number of times all values have appeared divided by the number of values. Generally, values with a current frequency above the average or more common than those with a current frequency below the average.

- History

The history data is broken up into individual columns for each draw in the database for the current game. The index numbers are relative to either the first record in the database or the first selected record if you are viewing a table for a selected block of past draws. The values shown are the actual pick numbers in which the number pair itself appeared. In this example, the number 11 appeared in pick 1 and 36 appeared in pick 5 in draw number 336 and in 11 appeared in pick number 3 along ewith 36 in pick number 5 in draw number 338.

Triads Table

The triads table displays statistical information for each valid unique triplet of numbers in the current game. The listing will not display any triad which has never appeared in the game. The number triads are listed along the left edge of the table, the statistical analysis in the center and the history on the right side. For a detailed description of each part of the table, [click](#) on the area of interest in the sample below.

Like pairs, this information can be used to fill out your pool of numbers if you have a couple of numbers you expect in the next draw by selecting those numbers that frequently appear in the same draws with the ones you are expecting. Likewise, the triads can also be used to seed the pool with triplets that are particularly hot or overdue.

Be careful when using triad analysis with lotto games that have 50 or more numbers. There will be over 20,000 possible triads and this will require both a great deal of time and hard disk space to process.

[Basic Table Features](#)

	Aging Data			Freq. Data		History									
	Cur	Avg	Med	Cur	Avg	19	20	21	22	23	24	25	26	27	28
5-1-4	2	13	11	2	1								123		

- Value

The value, in this case 5-1-4, is one of the actual triads of numbers possible in the game. For unordered games like Lotto, these numbers will always appear in order from lowest to highest. For ordered games, they will appear in the same order in which they appeared in the draw.

- Current Age

The number of draws since this particular number triad was last drawn.

- Average Age

The typical number of draws between appearances of this number triad.

- Median Age

Exactly one half of the previous appearances of this number triad took longer than this value and one half appeared in less time than this value. If the number tends to be wild in its appearances, median age tends to be a more accurate measure of "normal" behaviour.

- Current Frequency

An actual count of the number of times this number triad has been drawn over the history of the game. This count is based on the number of draws in which it appeared and how many times it might have appeared in a single draw has no effect on the frequency. The current frequency is also a good measure of the accuracy of the aging information. The more often a value appears, the more reliable the idea of "normal" behaviour becomes.

- Average Frequency

This value is the same for all number triads and indicates the total number of times all values have appeared divided by the number of values. Generally, values with a current frequency above the average or more common than those with a current frequency below the average.

- History

The history data is broken up into individual columns for each draw in the database for the current game. The index numbers are relative to either the first record in the database or the first selected record if you are viewing a table for a selected block of past draws. The values shown are the actual pick numbers in which the number triad itself appeared. In this example, the number 5 appeared in pick 1, 1 appeared in pick 2 and 4 appeared in pick 3 in draw number 26.

Odd And Even Table

The odd and even number analysis is a simple count of how many odd numbers and how many even numbers appear in each draw. Odd numbers are 1, 3, 5, 7, 9, etc. Even numbers are 0, 2, 4, 6, 8, etc.

This is one of those tables that makes it abundantly clear that all combinations of numbers are not created equal. Plays made up of entirely odd or even numbers are extremely rare. The most common combinations of numbers will tend to be made up of an equal split between odd and even numbers.

The information provided in this table can be used in filtering out the low probability combinations of numbers in the plays you generate via any of the program's wheels via the Edit/Filter Your Plays menu option.

Basic Table Features

	Aging Data			Freq. Data		History									
	Cur	Avg	Med	Cur	Avg	332	333	334	335	336	337	338	339	340	341
3-3	1	3	3	119	49		0					0	0	0	

- Value

The value, in this case 3-3, is made up of each possible combination of odd and even numbers for the current game. The value on the left of the dash is the number of odd values in the draw and the number on the right of the dash the number of even values in the draw. Thus, the draws in the example were made up of three odd numbers and three even numbers.

- Current Age

The number of draws since this particular combination of odd and even values was drawn.

- Average Age

The typical number of draws between appearances of this combination of odd and even numbers.

- Median Age

Exactly one half of the previous appearances took longer than this value and one half appeared in less time than this value. If the number tends to be wild in its appearances, median age tends to be a more accurate measure of "normal" behaviour.

- Current Frequency

An actual count of the number of times each combination has been drawn over the history of the game. The current frequency is also a good measure of the accuracy of the aging information. The more often a value appears, the more reliable the idea of "normal" behaviour becomes.

- Average Frequency

This value is the same for all combinations and indicates the total number of times all values have appeared divided by the number of values. Generally, values with a current frequency above the average or more common than those with a current frequency below the average.

- History

The history data is broken up into individual columns for each draw in the database for the current game. The index numbers are relative to either the first record in the database or the first selected record if you are viewing a table for a selected block of past draws. The values shown are just indicators of which draws the combination appeared in. In this case draw numbers 333, 338, 339 and 340 were made up of three odd numbers and three even numbers.

Sums Table

The sums table is another of those that shows all combinations of numbers are not created equal. The sum is arrived at by adding together the individual numbers that make up a play. It shouldn't be hard to see that in a pick three game, there is only one combination of numbers that can have a sum of 0 (the combination 0-0-0). However, there are any number of combinations that would arrive at a sum of 14 (i.e. 1-8-5, 6-6-2, 2-9-3, etc.).

Generally, the most common sums will be those half way between the largest possible sum and the smallest possible sum. The information provided by this table can be used to eliminate plays generated by your wheel which could be considered low probability combinations of numbers via the Edit/Filter Your Plays menu option.

Basic Table Features

	Aging Data			Freq. Data		History									
	Cur	Avg	Med	Cur	Avg	332	333	334	335	336	337	338	339	340	341
1-5-2	7	48	43	7	3			0							

- Value

The value, in this case 152, represents each possible sum of the numbers that make up the current game. For example, in a typical lotto this would be a value between 21 and 249 or 279. For a daily game it would be a value between 0 and 27 or 36.

- Current Age

The number of draws since this particular sum was last drawn.

- Average Age

The typical number of draws between appearances of this sum.

- Median Age

Exactly one half of the previous appearances of this sum took longer than this value and one half appeared in less time than this value. If the number tends to be wild in its appearances, median age tends to be a more accurate measure of "normal" behaviour.

- Current Frequency

An actual count of the number of times each possible sum has been drawn over the history of the game. The current frequency is also a good measure of the accuracy of the aging information. The more often a value appears, the more reliable the idea of "normal" behaviour becomes.

- Average Frequency

This value is the same for all numbers and indicates the total number of times all values have appeared divided by the number of values. Generally, values with a current frequency above the average or more common than those with a current frequency below the average.

- History

The history data is broken up into individual columns for each draw in the database for the current game. The index numbers are relative to either the first record in the database or the first

selected record if you are viewing a table for a selected block of past draws. The zeros (0) indicate the draws in which each possible sum appeared. In this particular example, the sum 152 appeared in draw number 334.

Doubles Table

The doubles table displays statistical information for each valid double number in the current game. The listing is not available for unordered games (games like Lotto do not permit the same number to appear more than once in a single draw) and will not display any pair which is not a duplicate of a single number. The doubles are listed along the left edge of the table, the statistical analysis in the center and the history on the right side. For a detailed description of each part of the table, [click](#) on the area of interest in the sample below.

Roughly 25% of all pick 3 games will contain a duplicated number (i.e. 5-5). Thus, this information can be used to determine what doubles are particularly hot or overdue and, thus, be used to determine numbers to be pooled.

Basic Table Features

	Aging Data			Freq. Data		History									
	Cur	Avg	Med	Cur	Avg	S14	S15	S16	S17	S18	S19	S20	S21	S22	S23
0-0	21	18	12	30	29		13					24		14	

- Value

The value, in this case 0-0, is one of the actual pairs of numbers possible in the game that repeat the same digit. These numbers will always be identical.

- Current Age

The number of draws since this particular double was last drawn.

- Average Age

The typical number of draws between appearances of this double.

- Median Age

Exactly one half of the previous appearances of this double took longer than this value and one half appeared in less time than this value. If the number tends to be wild in its appearances, median age tends to be a more accurate measure of "normal" behaviour.

- Current Frequency

An actual count of the number of times this double has been drawn over the history of the game. This count is based on the number of draws in which it appeared and how many times it might have appeared in a single draw has no effect on the frequency. The current frequency is also a good measure of the accuracy of the aging information. The more often a value appears, the more reliable the idea of "normal" behaviour becomes.

- Average Frequency

This value is the same for all doubles and indicates the total number of times all values have appeared divided by the number of values. Generally, values with a current frequency above the average or more common than those with a current frequency below the average.

- History

The history data is broken up into individual columns for each draw in the database for the current game. The index numbers are relative to either the first record in the database or the first

selected record if you are viewing a table for a selected block of past draws. The values shown are the actual pick numbers in which the double itself appeared. In this example, the number 0 appeared in both pick 1 and 3 in draw number 515, picks 2 and 4 in draw number 520 and picks 1 and 4 in draw number 522.

Triples Table

The triples table displays statistical information for each valid triple number in the current game. The listing is not available for unordered games (games like Lotto do not permit the same number to appear more than once in a single draw) and will not display any triple which is not a duplicate of a single number. The triples are listed along the left edge of the table, the statistical analysis in the center and the history on the right side. For a detailed description of each part of the table, [click](#) on the area of interest in the sample below.

Basic Table Features

	Aging Data			Freq. Data		History									
	Cur	Avg	Med	Cur	Avg	488	489	492	493	494	485	486	487	488	489
7-7-7	84	97	50	5	3						134				

- Value

The value, in this case 7-7-7, is one of the actual triads of numbers possible in the game that repeat the same digit. These numbers will always be identical.

- Current Age

The number of draws since this particular triple was last drawn.

- Average Age

The typical number of draws between appearances of this triple.

- Median Age

Exactly one half of the previous appearances of this triple took longer than this value and one half appeared in less time than this value. If the number tends to be wild in its appearances, median age tends to be a more accurate measure of "normal" behaviour.

- Current Frequency

An actual count of the number of times this triple has been drawn over the history of the game. This count is based on the number of draws in which it appeared and how many times it might have appeared in a single draw has no effect on the frequency. The current frequency is also a good measure of the accuracy of the aging information. The more often a value appears, the more reliable the idea of "normal" behaviour becomes.

- Average Frequency

This value is the same for all triples and indicates the total number of times all values have appeared divided by the number of values. Generally, values with a current frequency above the average or more common than those with a current frequency below the average.

- History

The history data is broken up into individual columns for each draw in the database for the current game. The index numbers are relative to either the first record in the database or the first selected record if you are viewing a table for a selected block of past draws. The values shown are the actual pick numbers in which the triple itself appeared. In this example, the number 7 appeared in picks 1, 3 and 4 in draw number 485.

Quads Table

The quads table displays statistical information for each valid quadruplet number in the current game. The listing is not available for unordered games (games like Lotto do not permit the same number to appear more than once in a single draw) and will not display any quadruplet which is not a duplicate of a single number. The quads are listed along the left edge of the table, the statistical analysis in the center and the history on the right side. For a detailed description of each part of the table, [click](#) on the area of interest in the sample below.

Basic Table Features

	Aging Data			Freq. Data		History									
	Cur	Avg	Med	Cur	Avg	562	563	564	565	566	567	568	569	570	571
3-3-3-3	1	570		1	1									1234	

- Value

The value, in this case 3-3-3-3, is one of the actual quads of numbers possible in the game that repeat the same digit. These numbers will always be identical.

- Current Age

The number of draws since this particular quad was last drawn.

- Average Age

The typical number of draws between appearances of this quad.

- Median Age

Exactly one half of the previous appearances of this quad took longer than this value and one half appeared in less time than this value. If the number tends to be wild in its appearances, median age tends to be a more accurate measure of "normal" behaviour.

- Current Frequency

An actual count of the number of times this quad has been drawn over the history of the game. This count is based on the number of draws in which it appeared and how many times it might have appeared in a single draw has no effect on the frequency. The current frequency is also a good measure of the accuracy of the aging information. The more often a value appears, the more reliable the idea of "normal" behaviour becomes.

- Average Frequency

This value is the same for all quads and indicates the total number of times all values have appeared divided by the number of values. Generally, values with a current frequency above the average or more common than those with a current frequency below the average.

- History

The history data is broken up into individual columns for each draw in the database for the current game. The index numbers are relative to either the first record in the database or the first selected record if you are viewing a table for a selected block of past draws. The values shown are the actual pick numbers in which the quad itself appeared. In this example, the number 3 appeared in picks 1, 2, 3 and 4 in draw number 570.

Duplicates Table

This table displays information on the number patterns that tend to appear in the ordered games which permit numbers to be drawn more than once in each play. This table is not available for games like Lotto since numbers can only appear once in any given draw.

Generally, the analysis is looking to see which draws are made up entirely of unique numbers, how many draws will tend to include a double, a triple, etc. This information can then be used to gain an understanding on which number patterns produce the most reliable results. For example, roughly 75% of all pick three draws are made up of three unique numbers, about 25% are made up of a double and one unique number and less than 1% of the draws will be triples. Thus, playing triples is a poor bet.

This information can be used to remove low probability plays from your wheeled plays via the Edit/Filter Your Plays menu option.

Basic Table Features

	Aging Data			Freq. Data		History									
	Cur	Avg	Med	Cur	Avg	650	651	652	653	654	655	656	657	658	659
4-0-0-0	1	2	2	290	142	0	0						0		0

- Value

The value, in this case 4-0-0-0, represents a count of the number of unique digits, doubles, triples and quads making up each draw. Thus, in this example, the draw was made up of 4 unique numbers and there were no doubles, triples or quads. On the other hand, a value of 2-1-0-0 would indicate a draw made up of two unique numbers and one double, 0-2-0-0 would be a draw made up of two doubles, 1-0-1-0 would be a draw made up of one unique number and a triple.
- Average Age

The typical number of draws between appearances of this combination of numbers.
- Median Age

Exactly one half of the previous appearances of this combination of numbers took longer than this value and one half appeared in less time than this value. If the number tends to be wild in its appearances, median age tends to be a more accurate measure of "normal" behaviour.
- Current Frequency

An actual count of the number of times each combination of numbers has been drawn over the history of the game. This count is based on the number of draws in which it appeared and how many times it might have appeared in a single draw has no effect on the frequency. The current frequency is also a good measure of the accuracy of the aging information. The more often a value appears, the more reliable the idea of "normal" behaviour becomes.
- Average Frequency

This value is the same for all combination of numbers and indicates the total number of times all values have appeared divided by the number of values. Generally, values with a current frequency above the average or more common than those with a current frequency below the

average.

- History

The history data is broken up into individual columns for each draw in the database for the current game. The index numbers are relative to either the first record in the database or the first selected record if you are viewing a table for a selected block of past draws. The zeros (0) indicate the draws in which each possible arrangement of numbers appeared. In this case, draws made up of four unique values appeared in draws numbers 550, 551, 557 and 559.

Tens Duplicates Table

This table provides an analysis of the grouping of multiples of ten in the current game. Since all daily type ordered games are made up of values between 0 and 9, this table is not valid for these game types.

Multiples of ten are represented by the numbers 0-9, 10-19, 20-29, 30-39, etc. Thus, any number between 20 and 29 represents the same multiple of ten: 2. The analysis represents how many numbers represent a unique multiple of ten, how many times two numbers were drawn from the same multiple of ten, three numbers and so on.

The analysis will show that combinations of numbers which do not contain at least one number which represents the only value from one multiple of ten are extremely rare. Likewise, combinations of numbers which contain more than three values from the same multiple of ten are also quite rare. Thus, the plays you make should contain one unique value from a multiple of ten and no more than three numbers drawn from a single multiple of ten.

This information can be used to filter out any plays generated by your wheel which would be considered low probability combinations via the Edit/Filter Your Plays menu option.

Basic Table Features

	Aging Data			Freq. Data		History									
	Cur	Avg	Med	Cur	Avg	332	333	334	335	336	337	338	339	340	341
4-1-0-0-0-0	4	7	7	48	38		0	0			0				

- Value

The value, in this case 4-1-0-0-0-0, represents each possible combination of multiples of ten made up of unique values, pairs of numbers from the same multiple of ten, triples, and so on. In this example, the draw was made up of four values from four different multiples of ten and on pair of numbers from a fifth multiple of ten. The pattern 1-1-1-0-0-0 would represent one unique value from a multiple of ten, one pair of numbers from a second multiple of ten and three numbers from yet a third multiple of ten. The pattern 0-3-0-0-0-0 would be a draw made of two numbers drawn from each of three different multiples of ten. The pattern 1-0-0-0-5 would be a draw with one unique number from a multiple of ten and five numbers drawn from a second multiple of ten... very rare indeed.

- Current Age

The number of draws since this particular pattern was last drawn.

- Average Age

The typical number of draws between appearances of this pattern.

- Median Age

Exactly one half of the previous appearances of this pattern took longer than this value and one half appeared in less time than this value. If the number tends to be wild in its appearances, median age tends to be a more accurate measure of "normal" behaviour.

- Current Frequency

An actual count of the number of times each pattern has been drawn over the history of the

game. This count is based on the number of draws in which it appeared and how many times it might have appeared in a single draw has no effect on the frequency. The current frequency is also a good measure of the accuracy of the aging information. The more often a value appears, the more reliable the idea of "normal" behaviour becomes.

- Average Frequency

This value is the same for all patterns and indicates the total number of times all values have appeared divided by the number of values. Generally, values with a current frequency above the average or more common than those with a current frequency below the average.

- History

The history data is broken up into individual columns for each draw in the database for the current game. The index numbers are relative to either the first record in the database or the first selected record if you are viewing a table for a selected block of past draws. The zeros (0) shown indicate the draws in which each particular pattern appeared. In this example, draws made up of four unique multiples of ten and one pair of numbers from a fifth multiple of ten appeared in draws 333, 334 and 337.

Ones Duplicates Table

This table provides an analysis of the grouping of ones digits in the current game. Since all daily type ordered games are made up of values between 0 and 9, this table is not valid for these game types, the Duplicates table in the menu section for ordered games performs the same function for games of their type.

Ones digits are represented entirely by the numbers 0-9 regardless of the multiple of ten. Thus, the ones digit in the number 24 is 4. It is also the ones digit in the value 34, 44, 14 and 4. The ones digit in the value 19 would be 9.

The analysis will show that combinations of numbers which do not contain at least one number which represents a unique ones digit are extremely rare. Likewise, combinations of numbers which contain more than two values using the same ones digit are quite rare. Thus, the plays you make should contain one unique ones digit and no more than two numbers using the same ones digit.

This information can be used to filter out any plays generated by your wheel which would be considered low probability combinations via the Edit/Filter Your Plays menu option.

Basic Table Features

	Aging Data			Freq. Data		History									
	Cur	Avg	Med	Cur	Avg	332	333	334	335	336	337	338	339	340	341
4-1-0-0-0-0	3	2	2	168	49	0		0	0	0	0	0			

- Value

The value, in this case 4-1-0-0-0-0, represents each possible combination of ones digits made up of unique values or duplicates of the same digit. In this example, the draw was made up of four values four different ones digits and one pair of numbers using a fifth ones digit (i.e. 1-4-15-29-35-42). The pattern 1-1-1-0-0-0 would represent one unique ones digit, one pair of numbers using a second ones digit and three numbers using yet a third ones digit (i.e. 1-14-21-23-33-43).

- Current Age

The number of draws since this particular pattern was last drawn.

- Average Age

The typical number of draws between appearances of this pattern.

- Median Age

Exactly one half of the previous appearances of this pattern took longer than this value and one half appeared in less time than this value. If the number tends to be wild in its appearances, median age tends to be a more accurate measure of "normal" behaviour.

- Current Frequency

An actual count of the number of times each pattern has been drawn over the history of the game. This count is based on the number of draws in which it appeared and how many times it might have appeared in a single draw has no effect on the frequency. The current frequency is also a good measure of the accuracy of the aging information. The more often a value appears, the more reliable the idea of "normal" behaviour becomes.

- Average Frequency

This value is the same for all patterns and indicates the total number of times all values have appeared divided by the number of values. Generally, values with a current frequency above the average or more common than those with a current frequency below the average.

- History

The history data is broken up into individual columns for each draw in the database for the current game. The index numbers are relative to either the first record in the database or the first selected record if you are viewing a table for a selected block of past draws. The zeros (0) shown indicate the draws in which each particular pattern appeared. In this example, draws made up of four unique ones digits and one pair of numbers representing a fifth ones digit appeared in draws 332 and 334 through 338.

Partitions Table

This table provides an analysis of the grouping of multiples of ten in the current game. Since all daily type ordered games are made up of values between 0 and 9, this table is not valid for these game types.

Multiples of ten are represented by the numbers 0-9, 10-19, 20-29, 30-39, etc. Thus, any number between 20 and 29 represents the same multiple of ten: 2. The analysis represents how many numbers were drawn from each unique multiple of ten. This information can then be used to determine which multiples of ten are producing the greatest number of winning numbers and the least, which multiples of ten are overdue, hot or cold.

Basic Table Features

	Aging Data			Freq. Data		History									
	Cur	Avg	Med	Cur	Avg	327	328	329	330	331	332	333	334	335	336
1-1-1-2-1	7	24	12	14	3		0					0	0		

- Value

The value, in this case 1-1-1-2-1, represents each possible combination of multiples of ten depending on how many multiples of ten are valid within the game. In this example, the draw was made up of one number between 0 and 9, one number between 10 and 19, one number between 20 and 29, two numbers between 30 and 39 and one number between 40 and 49. The pattern 3-2-1-0-0-0 would be a draw with three numbers between 0 and 9, two numbers between 10 and 19 and one number between 20 and 29.

- Current Age

The number of draws since this particular pattern was last drawn.

- Average Age

The typical number of draws between appearances of this pattern.

- Median Age

Exactly one half of the previous appearances of this pattern took longer than this value and one half appeared in less time than this value. If the number tends to be wild in its appearances, median age tends to be a more accurate measure of "normal" behaviour.

- Current Frequency

An actual count of the number of times each pattern has been drawn over the history of the game. This count is based on the number of draws in which it appeared and how many times it might have appeared in a single draw has no effect on the frequency. The current frequency is also a good measure of the accuracy of the aging information. The more often a value appears, the more reliable the idea of "normal" behaviour becomes.

- Average Frequency

This value is the same for all patterns and indicates the total number of times all values have appeared divided by the number of values. Generally, values with a current frequency above the average or more common than those with a current frequency below the average.

- History

The history data is broken up into individual columns for each draw in the database for the current game. The index numbers are relative to either the first record in the database or the first selected record if you are viewing a table for a selected block of past draws. The zeros (0) shown indicate the draws in which each particular pattern appeared. In this example, one value between 0 and 9, one value between 10 and 19, one value between 20 and 29, two values between 30 and 39 and one value between 40 and 49 appeared in draw numbers 328, 333 and 334..

Guaranteed Wins

When it comes right down to it, there is one (and only one) reason why any of us play the lottery... We want to win the big bucks. There is something almost magical about the dream of hitting the lottery. I often try and imagine what sensations I would experience at that moment of realization that my ticket matches all six numbers. Just last night one lucky Virginian hit the lottery for 18 million. That's \$900,000 a year before taxes (about \$595,000 a year after taxes). What went through that person's mind the moment he or she realized what has just happened? Unless you're a complete idiot, you are set for life in the blink of an eye. If your smart, your children and their children are set, as well. So there's the goal in a nutshell... The desire to spend the rest of our lives enjoying life instead of fighting for survival and ensuring the best of all worlds for our children.

The dream aside, reality dictates that the odds of ever winning the lottery are staggering at best. Yet we continue to throw money at the problem in the hopes of some luck. We put down our bet and walk away thinking only of the big one. We'll not complain if we match enough to win something, but we're not thinking about it either. We just keep throwing dollars at the game and hoping. The number of people playing the lottery in the hopes of matching four or five of the numbers is trivial at best. Each draw adds to the number of dollars lost on the lottery. However, in ignoring the possibility of matching three, four or five picks, we're making a big mistake. Using that view, there are things we can do to minimize the losses, and, if we're really good at picking our number sets and thoughtful about the plays we make, there is a fair chance of staying in the game while not piling up losses at all.

This topic is dedicated to that end. We're not even going to discuss the subject of winning the jackpot (though I'll mention it one more time in a moment). Rather, this topic is dedicated to not losing the lottery. The subject at hand is guaranteed winning. Now, before you get your hopes up, don't think for a moment that I am saying I can guaranty you'll win. I'm not. What we are going to discuss is how to guaranty a win *IF* the winning numbers for a given draw are in the set of numbers you picked for creating plays for that draw.

Let's start by covering a couple of terms we need to get straight in discussing a guaranteed win. The first is a number pool which is simply a collection of individual numbers we will want to use to make one or more complete plays. In this case we are talking about simple numbers - 1, 2, 3, 4, etc. Having done all of our analysis, we will pick a set of numbers we think are going to be drawn and use that set to generate a group of plays. The individual numbers are our pool. The second term is a number wheel which is nothing more than a system for churning out complete plays from our pool of numbers. There are all sorts of wheels. For example, a random wheel would randomly select numbers from the pool to make a single play. Another wheel would be an exhaustive wheel. In this case the wheel will crank out one play for every possible combination of the numbers in our pool. (LottoMan provides both of these wheels). There are a whole host of other possible wheels. However, regardless of how the wheel goes about creating plays, remember that a wheel is just a system for making plays out of the numbers in the pool.

In this topic we are discussing a single wheel type which will produce a set of numbers that will guaranty a win if (and only if) the actual winning numbers are in our pool. This wheel can be thought of as an intelligent wheel in that it isn't just blindly cranking out plays. There is a logic behind the plays it selects. The previous two examples, on the other hand, are dumb wheels. They are simply cranking out numbers. We'll start by discussing the logic behind the guaranteed wheel and follow up with how you can put this wheel to work. We'll wrap the entire discussion up with the math you need to determine how many wins of each type you can expect from the plays this wheel produces. For what it's worth, it needs to be pointed out that this wheel is only valid for games which use a continuous set of non-repeating numbers (such as the pick six lotto games). Also, you don't have to understand the math behind this wheel to use it. However, the better you understand it, the more you'll get from the wheel.

In order to understand the mechanics of this wheel, we'll digress for a moment to the topic of number theory. When you pool numbers for this wheel, they are combined into a single list of numbers regardless of the pick in which they were selected. This organization brings us back to the math that defines the possible combinations of those numbers. The formal definition of the formula is as follows:

$$Z_n = Z_{n-1} \bullet (Y-i) / (X-i) [i \Rightarrow 0..X-1, Z_0 = 1]$$

Z is the number of combinations and Z sub zero (the starting value of Z) is one (1), Y is the number of digits in your pool and X is the number of picks in the game. The formula is actually an iterative equation. In other words, we keep repeating it for all of the values of i. You can check the equation by setting Y to six. You'll see that the solution to the equation is one. Obviously, there is only one possible combination of six numbers in a six digit play. Thus, if we are playing a pick six game with eight numbers in the pool, the solution to this equation would be:

$$Z = 8/6 * 7/5 * 6/4 * 5/3 * 4/2 * 3/1 = 28$$

There are twenty-eight possible combinations of the eight numbers in the pool. That's not an unreasonable bet. However, what happens if we put twelve numbers in the pool? In this case there are 924 combinations and not many of us are going to bet that much. The point of this is that the more numbers we place in the pool, the more combinations of those numbers you have to bet to ensure a win. Not only that, but the more numbers you place in the pool, the faster the number of combinations rises. Note that with six numbers in the pool there is just one possible combination, for seven numbers there are seven combinations, for eight number there are twenty-eight, for nine there are eighty-four, and so on.

However, if we pick twelve numbers, we are far more likely to find all six winning numbers in that set than if we only picked eight. In other words, the odds of the winning numbers being in the set of 924 possible plays is obviously better than the odds of those numbers being in the set of 28 plays that eight numbers would produce. It follows that the more numbers we place in our pool, the better the odds of our finding all six winning numbers in the pool. However, unless we are willing to make huge bets, we're going to pick some smaller subset of the pool's combinations to play. That being the case, the more numbers we put in the pool, the less likely we are to have picked the right combinations from the resulting set of combinations. It would seem that the two actions are offsetting each other. One improves the odds of winning while the other worsens them. Thus, it seems we gain little by using a larger pool of numbers.

This realization leads us to a simple question with a complex answer. How can we make use of a large pool while maintaining a fair chance at winning. The first part of the answer brings us back to changing our view of playing the lottery from winning the big one to winning anything at all. Using Virginia as my example, stop and consider that if just three numbers are matched the prize is a free ticket (\$1), matching four is typically worth \$50 and matching five averages around \$1500. There's money to be had even if we don't hit the big one. Thus, there may be a benefit in shifting our view from winning the big one to winning anything and leave the jackpot to chance.

In fact, there is a great deal of benefit in this latter observation. Going back to our equation and sticking with the Virginia lottery (six numbers out of forty-four) there are some interesting facts to be found out about matching three, four or five picks. The fact is that the odds of getting just three numbers is only 1 in 662, matching four is 1 in 9,050 and matching five is 1 in 181,001. In all three cases, the odds are obviously much improved over the 1 in 7.1 million odds of getting all six numbers right. Further, if we were to bet more than one ticket, the odds improve even more. For example, if we play fifty tickets, the odds of matching three is 1 in 13, matching four is 1 in 181 and matching five is 1 in 3,620. Expanding a bit on this train of thought, we'll note that should we randomly select a pool

of twelve numbers, the odds are only 1 in 7,640 that all six winning numbers are in that pool of numbers, the odds of five numbers being in the pool is 1 in 1,175, four numbers is 1 in 147 and three numbers is just 1 in 14. This pool results in a possible 924 combinations and, thus, the odds of matching three, four or five tickets is 1.3 to 1, 1 in 10 and 1 in 196, respectively. Thus, as we've already concluded, the more numbers we pool, the better the odds of finding the winning numbers in that pool, and, we can add to that fact the realization that the fewer numbers we desire to match, the better the odds of achieving that match. Remember that these odds are based on randomly selecting a pool of numbers. Assuming that we use sound selection techniques to fill the number pool, our odds should be better still.

Without wandering any further into the realm of theory, let's develop these observations into something of a system that will permit us to take advantage of what we've discovered. If we back off from the idea of winning it all to winning something less, we can choose a subset of the possible combinations of the pooled numbers in a way that is aiming at winning a smaller prize while still leaving us the opportunity to win the big one. For the sake of this example I'm going to assume that we want to guaranty a three number match. That being the case, how many three number combinations are there in a pool of twelve numbers? Going back to our equation, yet again, the answer is 220. However, each six number combination I play accounts for up to 20 of these three number combinations. Thus, it should require far fewer than 220 plays to cover all of the three digit combinations. The question is... How many plays will I have to make to accomplish this task and what plays will produce this result while requiring the absolute lowest number of plays?

In order to solve this problem, I would have to start by building a list of every three digit combination of the twelve numbers in my pool. With that list in hand, I would next create a list of every six number combination of the twelve digit pool. From here I might take the first set of numbers from the play list and then check off every three digit combination that play covers. Take the next play from the list and check off the combinations it covers, and so on, until I've covered every three digit combination. This approach would cover all of the combinations in the fewest number of plays. However, the problem with this approach is that it is biased in it's use of the numbers in the pool. Depending on which end of the list I start from, the resulting group of plays I'd be using would tend to shift the use of numbers toward one end, or the other, in the set of pooled numbers. You can try this on paper with a pool of eight, if you like, and you'll see what I'm saying. It would be far better to have a set of plays which covers all of the combinations but is unbiased, thus giving us the best chance of getting more than three of the numbers right. This could be done by randomly picking a play from the play list and checking off the three digit combinations that it covers, randomly selecting another play, and so on, until all of the combinations are covered. However, now we'll find ourselves using far more plays than required to cover the three digit combinations. The numbers we have are reasonably unbiased but we're going to make a larger bet than required to cover them. To make matters worse, this approach still does not guaranty the our use of numbers in the pool is truly unbiased. In fact, it is almost certain to be biased, just not as badly. So, how do we cover all of the three number combinations with unbiased plays while betting no more than absolutely required?

To ensure that the plays we select do not bias the numbers we're using, we need to ensure that each number is used with the same frequency. If each number appears the same number of times within our set of plays, the odds for each number remains equal to the rest. If we can determine how many times each number needs to be used to cover all of the three digit combinations in the minimum number of plays, we can randomly select plays, mark off the combinations they cover and keep track of how many times we've used each number. When we select the next play, we can reject it if it contains a number that has been "used up". In other words, if we are supposed to use each number five times and we've already used the number 2 five times, we'll discard any randomly selected play that contains a two. In the end we'll arrive at a set of plays which covers every three digit combination, uses every number in the pool the same number of times and uses no more plays than absolutely required. Therefor, the answer to our question lies in finding out how many times we have to use each number from the pool. Without delving into the derivation of the equation, the formula below will provide the answer:

$$Z_n = Z_{n-1} \cdot ((X-Y)/(M-1)+1) \quad [i \Rightarrow 0..M-1, Z_0 = 1]$$

This formula, too, is an iterative equation. Z is the number of times we need to use each number from the pool, X is the number of entries in the pool, Y is the number of picks in the game and M is the number of matches we want to guaranty. As before, the initial value of Z is 1. Now, given our twelve digit pool in a pick six game where we want to guaranty three matches, the solution to the problem is:

$$Z = (6 / 2 + 1) * (6 / 1 + 1) = 28$$

Thus, we will need to use each number 28 times to ensure we cover all 200 three digit combinations. We can also use this information to find out how many plays it will take to do this. Since there are twelve numbers being used twenty-eight times, there are $12 * 28 = 336$ numbers used. Further, since each play uses six numbers, we will need $336 / 6 = 56$ plays to cover every combination. This is how the program goes about telling you how many plays are needed to cover your bet.

All that remains is to select which plays we will use. The program randomly selects six numbers from your pool and creates a play. It then marks off one use for each of the numbers in the play it just created. It then selects another random six numbers from the pool, and so on, until it has finished creating the plays. Each time it checks to see if any of the pooled numbers have been used up and removes those that have from the pool. In the end we have a minimum set of plays that covers all 220 combinations while keeping the use of numbers unbiased. Keep in mind that the program will not produce the same play twice on a given draw date. Thus, every play generated will be unique.

Armed with a group of plays that guaranty matching three picks, what does this do for us? First, if any three of the six winning numbers are in our pool, we can be certain that we have at least one ticket that matches those three numbers. In fact, depending on which plays were used to build the set, there could be more than one ticket that matches all three. Depending on what lottery you're playing, that ticket could be anywhere from \$1 to \$5. That doesn't pay back the \$56 bet, but it does cut the loss a bit.

In the simplest terms, the power of this wheel becomes apparent when more than three of the picks are in our pool. In this case, the odds of our having a ticket that matches all of the winners in our pool is given by the number of possible combinations divided by the number of plays made or, in this case, $924 / 56 = 16.5$, or, odds of 1 in 16.5. Further, the more winning numbers in the pool, the more tickets we will have that match three picks. If, for example, five winning numbers were in the pool, we can figure out how many three digit combinations those five numbers produce using the first formula with five as the number of digits and the three matches as the number of picks. Thus, there would be at least $5/3 * 4/2 * 3 = 10$ tickets that match three picks.

We can use that information to determine the odds of having a ticket that matches more than three picks by looking at what is left in the pool and how the matches we have affect that subset of possible combinations. There are three picks left to fill (since we've already determined we matched three of them) and nine numbers left to fill them with (our twelve number pool minus the three numbers we've matched). Thus there are $9/3 * 8/2 * 7 = 84$ possible combinations of the remaining numbers in the pool. Since we matched three numbers on at least 10 tickets and there are 84 combinations of the remaining numbers, the odds of our matching more than three picks can be no worse than $84/10$ or 1 in 8.4. Taking it the extra step, to having all six winning numbers in the pool, there will be at least 20 tickets matching three picks and the odds of our having a ticket matching more than three picks is just $84/20$ or 1 in 4.2.

In fact, if we get down to nit and grit, the odds are actually better than this. If we stick to having all six winning numbers in the pool, that means that out of the 84 possible remaining combinations in

the pool, there is one that matches six picks, four that match five picks and nine that match four picks. Thus, there are a total of fifteen combinations that will match more than three picks. Therefore, the correct odds would be the 84 combinations of the plays that match three of the numbers divided by the number of combinations that match more than three picks or 1 in 5.6 and we have at least 20 tickets that matched three. Thus, the odds of our having a ticket that matches more than three picks is $5.6/20 = 0.28$ or 3.5 to 1... The odds are actually in our favor! You can't ask for much more than that.

In Virginia, as I've already pointed out, matching four averages \$50. Thus, there is a 3.5 to 1 chance I've matched four, plus the other 19 tickets that matched three for a total winning of \$59. OK, so it's only \$3 more than I played, but the point is I took 56 shots at the jackpot (told you I would mention it again) and if I can get all six numbers in the pool, the odds are 3.5 to one that I'll have played them for free. In addition, the odds are slightly better than even that I'll have matched five of the six (1.4 to 1). In this case, I would come out \$1,500 ahead even if I didn't hit the jackpot.

To summarize, this topic has described the process of generating guaranteed wins in detail and provided you with all of the mathematical tools you'll need to determine how this method applies to your lottery. The following shows the odds of placing three or more randomly selected numbers, out of forty-four, in a pool of twelve randomly selected numbers and the various odds of winning tickets using a twelve number pool in a pick six game if all six winning numbers are in the pool: You can use this summary to run the math yourself and verify that you are arriving at the same numbers.

As a final word, I need to make it clear that the odds calculations discussed in the last few paragraphs are not 100% accurate. There are several subtle issues that modify these odds. For example, the remaining combinations in a pool of twelve numbers containing six winning numbers on a match three guaranty is not exactly 84 - the various possible three digit combinations will cause this number to rise depending on which three digit sets were matched. These odds should be viewed as "general" purpose, best case, probabilities and as a tool in getting a feel for how much you want to bet and how much risk you are willing to put on that bet.

Overall odds: 1 in 7,059,052
3 of 6 Pooled: 1 in 14
4 of 6 Pooled: 1 in 147
5 of 6 Pooled: 1 in 1,175
6 of 6 Pooled: 1 in 7,640

Number of times each number must be used: 28
Number of plays required to cover three matches: 56

Match 3: guaranteed 20 or more
Match 4: 3.5 to 1
Match 5: 1.4 to 1
Match 6: 1 in 4.2

Using Custom Wheels

All serious lottery programs make use of number wheels. Some offer one or two wheels, others offer them by the hundreds. [LottoMan](#) is no exception. This is a subject already covered to one degree or another in the previous advanced understanding topics. [LottoMan](#) comes with several built in wheeling capabilities including exhaustive wheels, random wheels, guaranteed win wheels, and so on.

Wheeling a pool of numbers into a set of plays is a serious subject and one that many people far more intelligent than myself have devoted the better parts of their lives to. Among these folks are Dimitrov, Serotic and Gail Howard. I've developed a few, myself, which are included here (the guaranteed win wheels, etc.) and some others that are not yet available with [LottoMan](#) but will be in the future. However, I don't ever expect to take on the big boys. There are entire books devoted to the subject and virtually thousands of wheels others have already taken the time and effort to develop and test.

In the interest of not reinventing the wheel (pardon the pun) [LottoMan](#) offers a feature most other lottery programs do not. You can create your own wheels with [LottoMan](#). Or, if you're not the creative type, you can pick up any one of the number of books on the subject and enter the wheels presented by the book right into [LottoMan](#). The program has a built in wheel editor which permits you to create nearly any wheel you can dream up and a compiler that converts your wheel into an executable code and stores it in [LottoMan](#)'s custom wheel database. [LottoMan](#) can also decompile its custom wheels into plain text which you can print or copy for a friend. Always remember that unless you designed the wheel yourself, it is most likely copyrighted.

Since most of these sorts of wheels are copyrighted works, [LottoMan](#) does not provide more than a few in its distribution set. As I finish up wheels of my own, or Mr Lucky at [LottoWorld® Magazine](#) feeds me more, I'll add them to [LottoMan](#)'s distribution set. In the meantime, you are free to copy wheels from any book or program you currently own into [LottoMan](#)'s database and put them to work for you. This is an invaluable feature. As you read and learn more about the lottery, you are certain to come across wheels you wish [LottoMan](#) could run... now it can.

The custom wheel language is plain English and easy to use. You do not have to be a programmer to create your own custom wheels. You have only to understand what wheels are and how they are described to add your own to the program. Should you need a little help, let me know and I'll do what I can.

- [Custom wheel language](#)
- [Creating a new custom wheel](#)
- [Editing an existing custom wheel](#)
- [View a custom wheel](#)

Wheel Editing Commands

Each custom wheel is made up of four parts: a description, a set of parameters that define the wheel, a definition of the individual items that make up the wheel's pool of numbers and a set of templates that describe how the pooled items are combined to make a play. The description is the only part of a wheel's definition that is not mandatory.

The following sections describe the individual components of each of these sections and how they apply to the finished wheel.

You are free to make any comments you might like in the wheel's instructions, however, comments are not stored with the compiled wheel so the user will not see your comments if he or she later edits the wheel. However, if you're creating your wheels in another text editor or sending them to another user as text, comments can be useful. Any text that follows a pair of slashes (//) will be ignored by the compiler. There are comments spread throughout the basic wheel description to aid you in seeing where you are. The same format can be used for your comments.

Example

```
// Description of the wheel
```

The description

The first item in a wheel's definition is a description of the wheel. The description should tell the user how to organize the numbers they select into pools for the wheel to build its plays from. There is only one description section for each custom wheel.

The description starts with the keyword "BeginDescription" on a line by itself and ends with the keyword "EndDescription" on a following line. All text between these two lines is considered part of the description and will be displayed to the user when choosing a custom wheel.

Example

```
BeginDescription
```

Select four digits in pick one's selection list, four digits in pick two's list and four digits in pick three's list to complete the wheel

```
EndDescription
```

The Wheel Parameters

The commands in this section define the nature of the wheel; its name, how many picks it generates in each play, how many numbers are expected in the users pool of numbers to be wheeled, how many matches it guarantees, how many matches are required in the pool to make the guaranty and how many plays the wheel will create. Each item is described on a line by itself. While it does not matter what order these parameters are defined in, all of them must be defined to compile the wheel.

The name of the wheel is defined by the keyword Name, followed by an equals sign and the text of the name. The name can be any reasonable length.

The number of picks used in each play is defined by the keyword Picks followed by an equals sign

and a number between 1 and 8.

The pool size is defined by the keyword PoolSize followed by an equals sign and a number between 1 and 26. This size is the combined number of digits in all of the wheel's pools. Thus, if the wheel uses one pool of twelve numbers, the definition would be PoolSize = 12. Likewise, if the wheel uses three four number pools, the definition would still be PoolSize = 12. There must be one entry in the items section of the wheel's definition for every number you specify here.

The number of matches the wheel guarantees is defined by the keyword Guaranty followed by an equals sign and a number between 0 and 8. The wheel does not have to guaranty any matches.

The number of winning numbers in the users pool required to make the guaranty is defined by the keyword RequiredHits followed by an equals sign and a number between 0 and 99. If the user must correctly pick 6 numbers in the wheel's pool to guaranty hitting a certain number of the winners, the definition would be RequiredHits = 6.

The number of tickets or plays the wheel will generate is defined by the keyword Tickets followed by an equals sign and a number between 1 and 32767. There must be one entry in the template section of the wheel's definition for every ticket you say it will generate.

Example

// Wheel parameters

```
Name = MR Lucky's Rule Of Like Pairs  
Picks = 6  
PoolSize = 12  
Guaranty = 4  
RequiredHits = 4  
Tickets = 36
```

Description of the wheel's pool

Every custom wheel is translating a set of numbers chosen by the user into a set of plays to be made by the user. The custom wheel language permits you to combine any number chosen by the user in the Number Wheel dialog's selection lists into a single list of numbers or to group the user's selections into two or more pools of numbers.

The description of where pooled numbers are to be gotten from starts with the keyword BeginItems on a line by itself and ends with the keyword EndItems on a line by itself. Between these two keywords, each line is assumed to be a description of a pooled number and it's source. There must be one entry for every number in the pool. Thus, if the PoolSize is defined as PoolSize = 12, there must be 12 entries in this section.

Each entry starts with a letter A-Z and is followed by an equals sign and a number which indicates which selection list in the Number Wheel dialog the number should be read from. If it doesn't matter which selection list the user places the number in, use the value 0.

Each entry does not have to be in alphabetical order, however, every letter from A to whatever must be used. You can not skip letters.

When the compiler defines the items in the pool, it does so in the order in which you define them. Thus, if you defined three numbers as all coming from pick 1, the first letter will be assigned to the first number the user places in pick 1, the second letter to the second number in the pick and so on.

Example

// Source description for all pool entries

BeginItems

A = Pick 1 // first number user puts in pick 1
B = Pick 1 // second number user puts in pick 1
C = Pick 1 // third number
D = Pick 1 // fourth number
E = Pick 2 // drawn from pick 2's selection list
F = Pick 2
G = Pick 2
H = Pick 2
I = Pick 3 // drawn from pick 3's selection list
J = Pick 3
K = Pick 3
L = Pick 3

EndItems

NOTE:

M = Pick 0 would draw the number for letter M from any of the pick lists not being specifically used by other pool items. In this example, that would be a number the user places in the selection lists for pick 4, pick 5 or pick 6.

Defintion of the plays to be generated

The last section defining any custom wheel is the set of play templates. These templates describe which numbers should be combined in what way from the user's pool of selected numbers. The template section begins with the keyword BeginTemplate on a line by itself and ends with the keyword EndTample on a line by itself. Any lines between these two are considered to be play templates.

Each template is made up of a group of letters taken from the item list in the previous section and appears on a line by itself. There must be the same number of templates in this section as defined by the Tickets = parameter above. Also, there must be one letter in the template for each pick the wheel generates as defined by the Picks = parameter above.

Example

// Individual play templates

BeginTemplate

ABEFIJ
ABEGIK
ABEHIL
ABFGJK
ABFHJL
ABGHKL
ACEFIK
ACEGIL
ACEHJK
ACFGJL

ACFHKL
ACGHIJ
ADEFIL
ADEGJK
ADEHJL
ADFGKL
ADFHJ
ADGHIK
BCEFJK
BCEGJL
BCEHKL
BCFGIJ
BCFHIK
BCGHJL
BDEFJL
BDEGKL
BDEHIJ
BDFGIK
BDFHIL
BDGHJK
CDEFKL
CDEGIJ
CDEHIK
CDFGIL
CDFHJK
CDGHJL

EndTemplate

A custom wheel using one number pool

// Description of the wheel

BeginDescription

Select your eighteen numbers for the wheel from any of
the number wheel's suggestion lists

EndDescription

// Wheel parameters

Name = Serotic LB45

Picks = 6

PoolSize = 18

Guaranty = 3

RequiredHits = 5

Tickets = 12

// Source description for all pool entries

BeginItems

A = Pick 0

B = Pick 0

C = Pick 0
D = Pick 0
E = Pick 0
F = Pick 0
G = Pick 0
H = Pick 0
I = Pick 0
J = Pick 0
K = Pick 0
L = Pick 0
M = Pick 0
N = Pick 0
O = Pick 0
P = Pick 0
Q = Pick 0
R = Pick 0

EndItems

// Individual play templates

BeginTemplate

ABCDEF
ABGHIJ
ABKLMN
ABOPQR
CDGHMN
CDIJOP
CDKLQR
EFGHQR
EFIJKL
EFMNOP
GHKLOP
IJMNQR

EndTemplate

// End Of User Defined Wheel

A custom wheel using several number pools

// Description of the wheel

BeginDescription

Select four digits in pick one's selection list, four digits in pick two's list and four digits in pick three's list to complete the wheel

EndDescription

// Wheel parameters

Name = MR Lucky's Rule Of Like Pairs

Picks = 6
PoolSize = 12
Guaranty = 4
RequiredHits = 4
Tickets = 36

// Source description for all pool entries

BeginItems

A = Pick 1
B = Pick 1
C = Pick 1
D = Pick 1
E = Pick 2
F = Pick 2
G = Pick 2
H = Pick 2
I = Pick 3
J = Pick 3
K = Pick 3
L = Pick 3

EndItems

// Individual play templates

BeginTemplate

ABEFIJ
ABEGIK
ABEHIL
ABFGJK
ABFHJL
ABGHKL
ACEFIK
ACEGIL
ACEHJK
ACFGJL
ACFHKL
ACGHIJ
ADEFIL
ADEGJK
ADEHJL
ADFGKL
ADFHJL
ADGHIK
BCEFJK
BCEGJL
BCEHKL
BCFGIJ
BCFHIK
BCGHJL
BDEFJL
BDEGKL
BDEHIJ

BDFGIK
BDFHIL
BDGHJK
CDEFKL
CDEGIJ
CDEHIK
CDFGIL
CDFHJK
CDGHJL

EndTemplate

// End Of User Defined Wheel

Making The Best Plays

Its all said and done. You've analyzed the game you're playing. You've chosen your analysis methods and set your limits. You've picked numbers you are hoping are winners. You've wheeled those numbers into a set of plays and ready to head off to the local lottery retailer.

Not quite. How good are the plays you've created? Are they good combinations of the numbers or do they just plain stink? As I stated in the section on [understanding the tables](#), all combinations of numbers are not created equal. Some patterns tend to be winners more often than others. If you're playing a lotto type game, what are the odds of the same six numbers winning twice in your lifetime? While possible, it's slim. Why [play](#) a set of numbers that have already been drawn? Why play combinations of numbers that rarely represent a winning pattern?

The last step in your pursuit of winning numbers is to examine the plays you've created and make sure you are making the best bets you can. If you've taken the time to look over your tables for the game you're playing, you'll have spotted certain types of draws that win frequently and others that rarely win. For example, in a [pick 6](#) lotto, nearly 33% of all winners have three odd numbers and three even numbers in them. If [your plays](#) are made up of nothing but all odd or all even numbers, there is less than a 1% chance they will win. Why play them?

Examine the tables and look to see what combinations work best. Decide how certain you want to be that your pattern is a good one. In other words, if you want to play combinations that represent 80% of the winning draws, you only want to use combinations made up of 2, 3 or 4 odd numbers. If the play you are making has 0, 1, 5 or 6 odd numbers, it is an unlikely winner and should not be played. You want to [delete](#) any plays that fit that description. The plays that are left represent those patterns of odd and even numbers that account for 80% of the winning draws.

To this end, [LottoMan](#) provides a [dialog](#) that allows you to define a set of rules for the number patterns you like and apply those rules to the plays you've wheeled before you complete your play slips and head off to the lottery retailer. The post-processor option is located in the [Edit](#) Menu as "[Filter Your Plays](#)".

I highly recommend you never fill out a play slip without having applied these filter rules to the plays you've created. Unfortunately, I can't tell you which rules to apply since they vary widely depending on how many picks make up a play and how many numbers are in the game. Take the time to study your tables, then apply what you learn to the plays you make. Decide what percent of the possible patterns you want your plays to cover and go from there.

The more patterns you cover, the more plays it takes to do so and the more often those plays will conform to the winning pattern. On the other hand, the fewer patterns you want to cover, the fewer plays it will take to do that and the less often you are likely to match the winning pattern. However, all is not lost. Remembering that 33% of all draws have three odd numbers and three even numbers, we could limit the plays we make to just those with three of each and still have a winning pattern in one out of every three draws.

Using a tight set of rules can greatly diminish the number of plays it takes to cover the pool of numbers you've selected. In fact, it possible to use a very large number of digits in your pool, before wheeling, and still only play a small number of tickets. I have seen the filtering rules reduce over 18,000 combinations to just 48 or 64 plays and still hit five of six.

The Main Data View

The main data view is your window into LottoMan, the data and options it provides. An example of the main data view is shown below followed by a brief description of each part of the view. You can also click on the area of the data view you are interested in to jump to the help topic for that item. Each description is accompanied by a list of the related help topics that give more detailed descriptions of that section of the view.

Current Play List										
	Date	P1	P2	P3	P4	P5	P6	B1	B2	↑
1	10/05/1994	01	05	07	08	14	17			
2	10/05/1994	01	05	07	08	14	28			
3	10/05/1994	01	05	07	08	17	28			
4	10/05/1994	01	05	07	08	28	32			
5	10/05/1994	01	05	07	14	17	20			
6	10/05/1994	01	05	07	14	25	33			
7	10/05/1994	01	05	07	14	32	33			
8	10/05/1994	01	05	07	17	20	33			
9	10/05/1994	01	05	07	17	25	33			
10	10/05/1994	01	05	07	20	25	28			
11	10/05/1994	01	05	07	20	28	36			
12	10/05/1994	01	05	07	20	32	33			
13	10/05/1994	01	05	07	25	28	36			
14	10/05/1994	01	05	07	32	33	36			
15	10/05/1994	01	05	08	14	17	36			
16	10/05/1994	01	05	08	14	25	28			
17	10/05/1994	01	05	08	14	25	33			
18	10/05/1994	01	05	08	17	20	25			
19	10/05/1994	01	05	08	17	20	28			
20	10/05/1994	01	05	08	17	25	28			
21	10/05/1994	01	05	08	17	28	36			
22	10/05/1994	01	05	08	17	32	36			
23	10/05/1994	01	05	08	20	25	32			
24	10/05/1994	01	05	08	20	28	36			
25	10/05/1994	01	05	08	20	32	33			

Numerical Analysis					
Confidence Index					
Picking Control - Upper Limit / Lower Limit					
Pick 1	80	50	Pick 3	68	38
Pick 2	70	40	Pick 4	58	28
			Pick 5	75	45
			Pick 6	80	50
Methods of Analysis			Graph View		
<input checked="" type="checkbox"/> Aging			<input checked="" type="checkbox"/> Frequency		
<input checked="" type="checkbox"/> Delta			<input type="checkbox"/> Trend		
			<input checked="" type="radio"/> Numerical Analysis		
			<input type="radio"/> Historical Data		

<u>Edit</u>	<u>Insert</u>	<u>Delete</u>
<u>Run Wheel</u>	<u>View History</u>	

Play List Table and Winning Plays

- [Winning Plays](#)
- [Your Plays](#)

This table displays either a list of winning plays over the history of the lottery or a list of the user plays you have made in the lottery.

Editing Options

- [Edit Data](#)
- [Insert Data](#)
- [Delete Data](#)

These buttons provide the means to add, remove or change entries within the table being displayed above them (Winning Plays or Your Plays).

Graphical View

[Numerical Analysis](#)

[Historical Data](#)

The graph displays either the results of the analysis of the historical trend for the game. Interpretation of the graphs is covered in the topics listed above.

Display Options and Limit Controls

[Pick Display Options](#)

[Bonus Display Options](#)

These "buttons" provide three controls over each possible pick within the current game. First, if the button looks like it is pressed in, the pick is displayed in the graphical view. If it looks like it is raised, the pick is not displayed in the graph. The number which appears in the center of the button is the upper limit for the pick. Any number which has a confidence index greater than this limit is not displayed when the pick is active. The number on the right of the button is the lower limit for the pick. Any number with a confidence index lower than this value is not displayed when the pick is active. These values are raised and lowered by clicking on the small buttons next to them or clicking on the number itself and using the up and down arrow keys. The graph will not be updated to reflect changes in these limits until you click on a different button or limit control. The color of the pick button's label corresponds to the color used to display information about that pick in the graph above.

Calculation Methods

[Aging](#)

[Delta](#)

[Frequency](#)

[Trend](#)

These options control which analysis methods should be applied to the historical data to arrive at a set of confidence indexes for the next draw. The indexes shown and the numbers suggested in the Number Wheel correspond to which of these options you have enabled. If a check mark appears next to the method name, the method is active in the confidence indexes shown.

Graphical View Options

[Numerical Analysis](#)

[Historical Data](#)

These buttons control which graphical view is displayed. If a small dot appears to the left of the title, that graph is the one that will be displayed.

Play History



This option switches the play table on the left side of the main data view from a list of the numbers you have played to a list of the numbers that have been drawn in this lottery as shown below. Along the left edge of the table are the index numbers given to each winning play ordered from the oldest play to the most recent play from top to bottom. This value corresponds to the index numbers (play number) shown in the historical data graph. The next column shows the date on which the play was drawn. To the right of the date are the individual picks from left to right across the table. For games like the daily pick three, that are ordered, the picks appear in the same order in which they were drawn. For games like the lotto, which are unordered, the picks appear in sorted order from the lowest number to highest. You can use the scroll bar on the right side of the table to move up and down through the history of the game. Alternatively, you can click inside the table and use the up and down arrow keys, page up and page down or Ctrl-End to move up and down through the list.

You can use this table to select a range of records to be used in calculating confidence indexes by clicking on the index number for the first record to be used and dragging the mouse down to the last record to be used while keeping the left button pressed. The selected records appear as depressed buttons while records not selected appear as raised buttons. As an alternative to dragging the mouse you can click on the first record then press space to "select" it. Hold down the shift key and use the up and down arrow keys to select the range to use. You can also use page up, page down, Ctrl-Home and Ctrl-End while holding the shift key down. Using Shift-Ctrl-End will select every record to the end of the list. If no records are selected (depressed) the entire history of the game will be used in calculating confidence indexes for the next draw.

Any time you enter a new winning play in this table, or make changes to an existing play, LottoMan will test it against the list of plays you have made for plays on the same date in order to determine how well you have done. If you have a sound card in your machine the program will also tell you how your plays performed.

As long as this table is visible, the add, delete and edit operations will work on the data in the history table. You must use the View/Your Plays option or use the View Picks button to switch to the list of user plays.

View History

Use this button to display history without using the menus.

Your Plays

Current Play List										
	Date	P1	P2	P3	P4	P5	P6	B1	B2	↑
1	10/05/1994	01	05	07	08	14	17			
2	10/05/1994	01	05	07	08	14	28			
3	10/05/1994	01	05	07	08	17	28			
4	10/05/1994	01	05	07	08	28	32			
5	10/05/1994	01	05	07	14	17	20			
6	10/05/1994	01	05	07	14	25	33			
7	10/05/1994	01	05	07	14	32	33			
8	10/05/1994	01	05	07	17	20	33			
9	10/05/1994	01	05	07	17	25	33			
10	10/05/1994	01	05	07	20	25	28			
11	10/05/1994	01	05	07	20	28	36			
12	10/05/1994	01	05	07	20	32	33			
13	10/05/1994	01	05	07	25	28	36			
14	10/05/1994	01	05	07	32	33	36			
15	10/05/1994	01	05	08	14	17	36			
16	10/05/1994	01	05	08	14	25	28			
17	10/05/1994	01	05	08	14	25	33			
18	10/05/1994	01	05	08	17	20	25			
19	10/05/1994	01	05	08	17	20	28			
20	10/05/1994	01	05	08	17	25	28			
21	10/05/1994	01	05	08	17	28	36			
22	10/05/1994	01	05	08	17	32	36			
23	10/05/1994	01	05	08	20	25	32			
24	10/05/1994	01	05	08	20	28	36			
25	10/05/1994	01	05	08	20	32	33			↓

This option switches the table of historical winning plays on the left side of [the main data view](#) to a list of the numbers you have played (or will play) as shown below. This table displays all of the plays you have entered or have been generated by the [Number Wheel](#). Along the left edge of the table from top to bottom are the index numbers for each record in the table. The next column shows the date on which the play would have been made or will be made. This date is used to match the plays in this table to the winning plays in the historical table. From left to right after the date are the numbers for each pick. For ordered games such as the daily the numbers appear in the same order we hope they will be drawn. For unordered games they appear in sorted numerical order from left to right. You can use the [scroll bar](#) on the right edge of the table to move up and down through the list of plays or [click](#) inside the table and use the up and down arrow keys, page up and page down or Ctrl-Home and Ctrl-End to move through the list of plays.

Any time you enter a play in this table or in the history table, [LottoMan](#) will match the plays in this table with the winning play for the same date. Each number which appears in red in this table was a winning number in the [draw](#) for the same date. Thus, at a glance, you can see how well your numbers have performed. If you have a sound card installed in your machine [LottoMan](#) will also tell you how well you have done.

As long as this table is visible, the [add](#), [delete](#) and [edit](#) operations will work on the data in the play list table. You must use the [View/Play History](#) option or use the View History button to switch to the list of winning plays.

View Picks

Use this button to view [your plays](#) without using the menu.

Editing Existing Plays

To access the Edit option, click on the Edit option in the main menu then click on Edit or press Alt-E and then E. Alternatively, you can use the Edit button in the main data view or press Alt-E. This option is not intended for adding new plays to you database, therefor, if you need to add a new play, use the Edit/Inset option.

The edit option is provided as a means of changing information about a play. This includes the date of the play and the numbers drawn for each pick. In order to use this option, you must first select one or more plays from the list. (For more information on selecting plays, see the Edit/Select topic)

Once you have selected the play(s) you want to edit, select the Edit option and the program will display the Edit Numbers dialog. Make whatever changes are required ands click OK. The program will then update the information in your database. This includes any changes in the order of the draws if you change the date. Also, as in the case of the Inset option, the program will sort the picks, as well, if the game you are playing does not repeat the numbers for each pick.



Use the edit button to skip the menus

Changing existing play data - by the numbers

Edit Numbers

Date: 10/01/1994

1st Pick: [Cyan Box]

2nd Pick: [Cyan Box]

3rd Pick: [Cyan Box]

4th Pick: [Cyan Box]

5th Pick: [Cyan Box]

6th Pick: [Cyan Box]

Bonus One: [Cyan Box]

Bonus Two: [Cyan Box]

Calendar: October '94 (Days: S, M, T, W, T, F, S; Dates: 1-31)

Buttons: OK, Cancel, Help

- 1 Select the play(s) you want to edit using the Edit/Select option or by selecting rows in the play table in the main data view.
- 2 Click on the Edit option in the main menu or press Alt-E
- 3 Click on the Edit option in the Edit menu or press E.

NOTE: You can combine steps 2 & 3 by clicking on the Edit button in the main data view.

- 4 The program will display the Edit Numbers dialog for the first play selected. Make whatever changes are required in the play.
- 5 Click on OK, press Enter or press Tab until the OK button is selected and press Enter. The play along with the changes you made will be returned to the database. You can undo any changes you made by clicking on Cancel, pressing Escape (Esc on your keyboard) or by pressing Tab until the Cancel button is selected and press Enter. Any changes you made will be discarded and

the play returned to the database unmodified.

- 6 If you selected more than one play to be edited, the Edit Numbers dialog will display the next play in the list... return to step 4. Otherwise, if this is the last play in the list, or the only play, the program will return to the main data view.

NOTE: The program will not, normally, recalculate the data after editing. Therefore, any changes you made will not be reflected in the analysis. You will have to use the Edit/Recalculate option. Also, changes you make are not automatically written to the file. You must use the File/Save option to save the changes to disk. You can undo any changes you made by using the File/Close option without saving the file. Once you save the file, you can not undo your changes.

Inserting New Plays

To access the Edit/Insert option, click on the Edit menu option in the main menu then click on Insert, or press Alt-E then I. Alternatively, you can click on the Insert button in the main data view window or press Alt-I. If you need only change information in an existing play (such as the date of the draw or one of the picks), you should not use the Insert option. Rather you should select the play, via Edit/Select or one of the other methods available and then use the Edit/Edit option.

The insert option is the means by which you enter new winning plays in the database for the current game. You can also use the insert option to add user plays to the database. Which list the new play will be added to depends on which one is currently being displayed. If the Winning Numbers list is active, new plays are added to that list. Otherwise, the new plays will be added to the list of user plays. For help on switching between the two play lists, see the View/Your Plays and View/Play History topics.

Once you have selected the Insert option, the program will display the Edit Numbers dialog. This is the same dialog used by the Edit/Edit option. Through this dialog, you specify the date of the draw and the numbers drawn for each pick. After you complete the data entry and click OK, the program will add the new record to your database and redisplay the dialog so that you may enter another play. If you do not have another to enter, click Cancel.

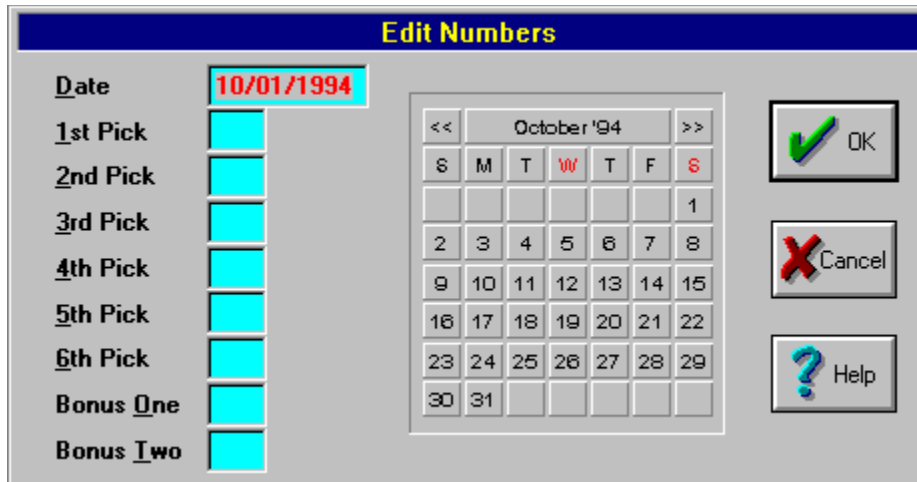
The program keeps all plays sorted by the date on which they were drawn or by the date for which they were played. This is done automatically, so you need not concern yourself with inserting new plays in the "correct" place, the program will find the correct place for you. It is very important that you keep your play histories up to date and with as few "holes" as possible. With the exception of Frequency analysis, all of the analysis methods are time dependent. That is, the information they generate is based on the order in which the draws occurred and from one draw to the next. If data is missing in the middle of your database, the results of the analysis will be incorrect. For this reason, it is better to leave out old plays if there is missing data that follows them.

Also, if the lottery you are playing is one like Lotto, where the numbers are drawn once per play, the program will sort them in order from lowest to highest numerical order. This is because these lotteries are not order dependent and we can gain a greater accuracy by using sorted picks. This is discussed in greater detail in the number theory topic. This is also handled automatically by the program.



Use the insert button to skip the menus.

Adding plays to the database - by the numbers



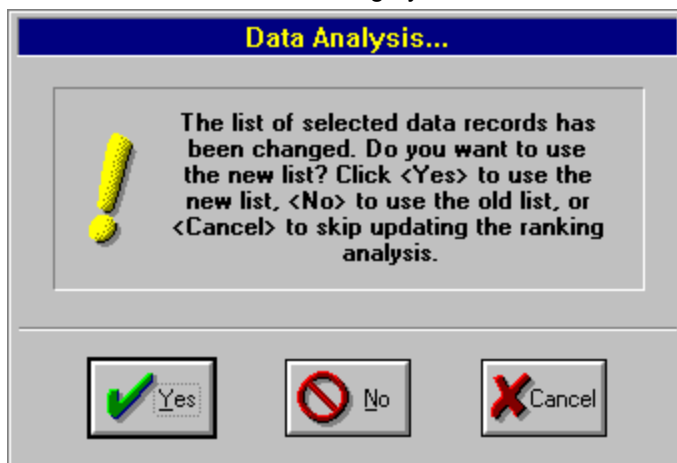
- 1 Click on the Edit option in the main menu or press Alt-E
- 2 Click on the Insert option in the Edit Menu or press I

NOTE: You can combine steps 1 & 2 by clicking on the Insert button in the main data view or pressing Alt-I.

- 3 Verify the date shown is correct. If not, select or enter the correct date.

NOTE: Dates are in the US format of Month-Day-Year (mm/dd/yyyy) and the full year is used as opposed to the two digit abbreviation. We're getting too close to 2000 for two digits and sorting to work.

- 4 Enter the number drawn for each of the picks. You can press Tab to move from one pick to the next.
- 5 Click on OK or press Enter to add the new play to the database. You may cancel the add operation at any time by clicking on Cancel, pressing escape (Esc on your keyboard) or by pressing Tab until the Cancel button is selected and pressing Enter.
- 6 If you have another play to enter, return to step 3. Otherwise, click on Cancel, press escape or use Tab and Enter to stop adding plays.
- 7 The program will now ask if you want to recalculate the database since you have added new records. Click on OK to recalculate using the new plays, click on No to recalculate using the previous list of plays or click on Cancel to skip the recalculation entirely. The dialog below demonstrates the message you will receive.



NOTE: LottoMan does not save new plays or changes when you make them. To record the changes in the files, you must use the File/Save option. Until that time, you can undo the changes you have made by closing the game (via the File/Close option) without saving. Once the file has been saved, changes can not be undone.

Deleting Existing Plays

To access the Delete option, click on the Edit option in the main menu then click on Delete, or press Alt-E then D. Alternatively, you can click the Delete button in the main data view or press Alt-D. If you need to change information about a play, you do not need to delete and re-enter the play. Rather, you should select the play to be edited using the Edit/Select option, then use the Edit/Edit option to make changes to the existing play.

The delete option is provided for removing plays from the database. This is more likely to be used for deleting old user plays than for winning plays. However, it will work for either. In order to use the delete option, you must first select which plays you want to delete. (For more information on selecting plays, see the Edit/Select topic).

Once you have selected the delete option, the program will display the Verify Delete dialog and the first selected play in order to verify you want to delete that play. Click Yes to delete the play, No to return the play to the database, Cancel to return all plays not yet deleted or All to delete all plays remaining in the list.



Use the delete button to skip the menus

Deleting plays from the database - by the numbers



- 1 Select the plays to be deleted using the Edit/Select option or by selecting the plays from the play list in the main data view.
- 2 Click on the Edit option in the main menu or press Alt-E.
- 3 Click on the Delete option in the Edit menu or press D.

NOTE: You can combine steps 2 & 3 by clicking on the Delete button in the main data view or pressing Alt-D.

- 4 Verify the play being displayed in the Verify Delete dialog is the one you want to delete. Click Yes if you want to delete it, click No if you do not. You may click Cancel at any time to return any selected plays not yet deleted to the database. You can skip the individual verification for any selected plays not yet deleted by clicking on All - this deletes all remaining plays in the selected

list.

NOTE: Once you click on Yes, you can not undo the change except as noted below. Take your time and be sure the record you are deleting is the one you intended to delete.

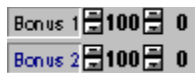
- 5 If there are any plays left in the selection list which have not been deleted yet, the program will display the next unverified play in the dialog... return to step 4. Otherwise, if there are no plays left to verify, the program will return to the main data view.

NOTE: While plays that you delete are removed from the lists, they are not removed from the file until you save the file using the File/Save option. Therefore, you can undo any deletions by using the File/Close option and not saving the file. Once you save the file, the deleted plays can not be recovered. Also, LottoMan does not, as of this version, reuse the file space once occupied by deleted plays. If you are doing a fair amount of deleting, the data files will tend to "grow". For this reason, you should rebuild the files from time to time, using the File/Rebuild option, in order to recover the unused space.

Bonus Display Options

The bonus options provided in the Options menu control the display of bonus data in the graphs LottoMan provides. These options may be set by clicking on the Option item in the main menu then clicking on the bonus you wish to change or by Pressing Alt-O followed by the underlined letter for the bonus you wish to change. Alternatively, you can change the state of a bonus pick by clicking the button that surrounds the bonus name in the main data view (example shown below). If the button is depressed, the bonus pick will be displayed, otherwise, if the button is in the up position, the bonus pick is not displayed. Bonus picks which are not available in the current game will be disabled in the menus and no button will appear in the main data view for those bonus picks. Disabled bonus picks can not be altered.

Enabling and disabling the individual bonus picks may make it easier to see the rankings in the numerical analysis graph and make it easier to see the movement of the individual bonus picks in the historical graph - particularly for games which repeat all numbers for each pick.



Clicking on the bonus name in the above will turn the bonus on and off without using the menus. If the box surrounding the bonus and it's limits is raised, the bonus is not displayed. If it is depressed, the bonus is visible. Invalid bonus picks for the current game are not displayed at all, including the bonus buttons. Note the colors of the bonus picks correspond to their graph colors.

Menu System

The main menu is your communication line with LottoMan. Through this menu you instruct the program as to what actions you want it to perform. The following topics describe what each of the main menu's options do. The caption above the main menu also gives the game title of the current lottery. In the upper right corner of the program window is a small button with an arrow pointing down. This is the Minimize Button which is used to reduce the program to an icon. Also, in the top left corner of the program window is a small icon that looks like a horizontal bar (actually it is supposed to be a spacebar like on your keyboard), this is the System menu which can be accessed by clicking on it or pressing Alt-Spacebar.

Many of the menu options LottoMan offers can also be accessed by a button in the main data view or by a keyboard shortcut. Each option that does offer these shortcuts will point out the equivalent button or keyboard shortcut in their descriptions.



Main Menu Options

- [File Menu](#)
- [Edit Menu](#)
- [Game Menu](#)
- [Options Menu](#)
- [Tables Menu](#)
- [View Menu](#)
- [Wheels Menu](#)
- [Help Menu](#)

Windows™ Menu Options

- [System Menu](#)

File Menu Options

File	Edit	Game	Opti
New			
<u>O</u> pen...		F2	
C <u>l</u> ose		F4	
<u>S</u> ave		Shift F2	
Save <u>A</u> s...			
R ebuild...			
Print <u>G</u> raph			
Print <u>H</u> istory			
Print <u>P</u> lays			
Printer Setup			
<u>E</u> xit		Alt+F4	

To access the file menu, press Alt-F or click on the File option in the main menu. The file menu is provided as a means of managing your lottery databases and printing information from the databases. The following sections detail each of the file menu options. For more information on any one of the menu options, just click on the menu item or select from the list below.

File Operations

[Create A New File](#)

[Open An Existing File](#)

[Close The Current File](#)

[Save The Current File](#)

[Save The Current File With A New Name](#)

[Rebuild Database](#)

Printing Options

[Print The Numerical Analysis/Historical Data Graph](#)

[Print The Table Of Winning Plays](#)

[Print The Table Of User Plays](#)

[Setup The Printer](#)

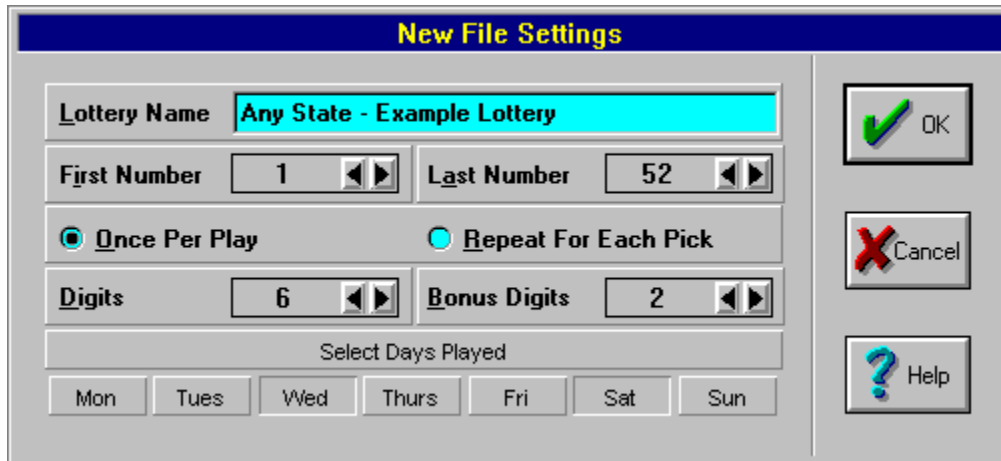
Misc.

[Exit LottoMan](#)

Creating A New Lottery File

To access the File/New option, press Alt-F and then N or click on File in the main menu then click on New in the File menu that appears. The new file menu option creates a new lottery database file and the first game in that file. This option should not be used to add a new game to an existing database, rather, use the Game/New menu option. Nor should this option be used to open an existing lottery database, in which case you should use the File/Open menu option.

Creating a new file - By the numbers



- 1 Click the File menu option in the main menu or press Alt-F
- 2 Press N or use the arrow keys to move the highlight to the word New and press Enter. The "New File Settings" dialog is displayed. (Pictured above - Click anywhere in the copy for information about that part of the dialog) From this point forward, you can quit at any time by clicking on the Cancel button. You can also click on the Help button to bring up this help screen.
- 3 Pick a name for your lottery and type it in. You must give the lottery a name in order to create a new file.
- 4 Specify the first and last number used in the lottery. The default values are 0 through 9 which is typical for a game like Pick 3.
- 5 Specify whether numbers are used once per draw or if the same numbers are repeated for each pick. Games like Pick 3 repeat the digits for each pick, and, games like Lotto use digits once per game. The default value is set to repeat digits.
- 6 Set the number of picks in a play and how many bonus picks there are. The default number of picks is three (3) and no bonus digits.
- 7 Set the days of the week on which the lottery is drawn. The default setting is seven days a week. If the button is down, the lottery is drawn on that day. If the button is up, the game is not drawn on that day.
- 8 Click on the OK button and the program will remove the new file settings dialog from the screen and display the main screen for the game. The name of your new game will appear in the caption bar at the top of your screen.

NOTE: Once you click OK, you can not go back and make changes to the game settings. Your only option will be to delete the game and create a new one.

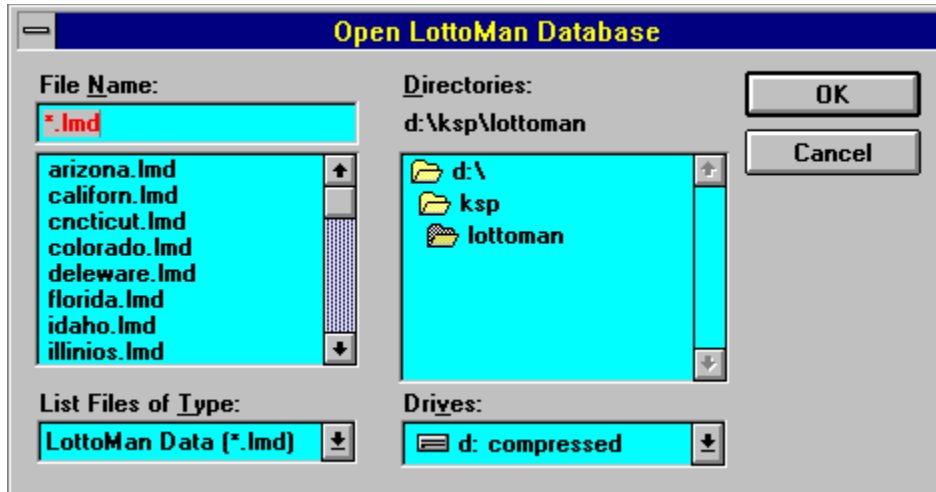
You are now ready to do whatever work you would like on the new game. You can add historical data

for winning plays or user plays, perform analysis on the data you enter, set analysis methods and limits, and so on. When you are done working, use the File/Save As option to save your new file to disk.

Opening An Existing File

To access the File/Open option, press Alt-F then O, click on the File option in the main menu then click on Open or press F2. The File/Open... option permits you to open an existing file. If you want to use a different game in the file that is currently open, you should use the Game/Select option instead of this one.

Opening a file - by the numbers



- 1 Click on the File option in the main menu or press Alt-F to access the File menu.
- 2 Click on the Open option in the File menu, press O or use the up and down keys to move the highlight to the word Open then press Enter. The program will display the file open dialog shown above (you may click anywhere in the above copy for detailed information about the parts of the dialog).

NOTE: You can combine steps 1 & 2 by pressing F2.

- 3 If the correct drive and directory are not already open, enter the correct path or select the correct drive and directory from the dialog.
- 4 Enter the name of your database. All LottoMan data files have the extension .LMD

NOTE: You may select one of the file names listed in the dialog, by clicking on it once or by pressing Tab until the file list is active, using the up and down arrow keys to highlight the correct file name and then press the spacebar to select the highlighted file.

- 5 When you are satisfied that the drive, directory and file name are what you want, Click on OK, press Enter or press Tab until the OK button is selected then press Enter.

NOTE: You can cancel the file open at any time by pressing Escape (Esc on your keyboard), clicking on the Cancel button, or press Tab until the Cancel button is selected and press Enter. Also, you can combine steps 4 & 5 by double clicking on the correct file in the list provided.

Once you have selected a file, LottoMan will open the file and search it for a list of all games contained in the file. If there is only one game in the file, it will be loaded and the program will continue on to the main data view window. If more than one game is stored in the file, the program will display the following dialog which lists the games in the file.

Selecting a game from the file - by the numbers



- 1 Press Tab until the list of games is active or click anywhere inside the game list.
- 2 Use the up and down arrow keys to highlight the game you want to load or click on the correct game.
- 3 Press Tab until the OK button is selected then press Enter or click on the OK button. The program will then load the game you have selected and display the main data view window.

NOTE: You can cancel the File Open at any time by clicking on Cancel or pressing Tab until the Cancel button is selected then pressing Enter. The program will clear the screen and return to the main program window with no files open.

Once you have opened a file and selected a game, you may go on to add, delete or change historical data, select analysis methods and limits, perform analysis, pick numbers for upcoming draws and so on. Should you later want to load a different game within the same database, you can use the Game/Select menu option without having to re-open the file.

Closing The Current File

To access the File/Close option, click on the File option in the main menu then click on Close, press Alt-F then L or press F4 to close the file without using the menus. If you want to change games within the current file, you do not need to use this option, rather, you should use the Game/Select option. If you just want to switch to a different Lottery database, you can use the File/Open option without closing the current file first. In this case, the program will close the file for you once you have selected a new file.

The Close File option is provided as a means of removing the current game and file from memory without leaving LottoMan. While a file is open, LottoMan keeps all information about the games in that file and all data for the current game in memory. Also, Windows provides a limited amount of display resources to it's programs and an open game uses a little over 20% of these resources. However, if no file is open, LottoMan uses almost no resources at all. Should you experience problems trying to run another program while a game is active, you can close the file to release the resources it is using to the other program. This allows you to run another program, when resources are getting tight, without having to restart LottoMan from scratch. When you are done with the other program, you can reopen the file and continue. You do not have to close the current file to exit LottoMan. The program will take care of that for you when you select File/Exit, select the Close option in the System Menu or double click on the System Menu's icon.

You do not have to save your current game before you close the file. If changes have been made to the game since it was opened or since the last save, the program will display a dialog which informs you that the file has changed and gives you the options of saving the changes, closing the file without saving the changes or canceling the close operation and returning to the current game. Clicking Yes saves your changes, clicking No throws them away (NOTE: once you click No, the changes are gone and can not be recovered) and clicking Cancel will cancel the close and return to working with the current game. The following is a sample of this dialog. The message text will vary depending on whether the file or game is new or if you have just been making changes to an existing game.



Saving The Current File

To access the File/Save option, click on the File option in the main menu then click on the Save option, press Alt-F then S or you can press Shift-F2 to save the file without using the menus. Saving the file does not close it. If you want to close the current file, use the File/Close option. Unless the file you are working with is a new file which has not yet been saved, the save option does not let you specify a file name. If you want to save the current game under a new file name, you should use the File/Save As option. Saving a file does not alter how much memory or display resources the current file is using. If you need to make more resources available for another program, you need to use the File/Close option.

Saving the file simply writes any changes you have made to the current game to your disk drive. LottoMan does not save changes as you work, rather all work is done in memory. If you turn your computer off while working on a game, or the power goes off, any changes made since the last save will be lost. For this reason, you should save your work from time to time if you have made many changes. Also, you should never turn your computer off while any program is running. As a rule, you should end all programs and exit Windows before you turn your computer off.

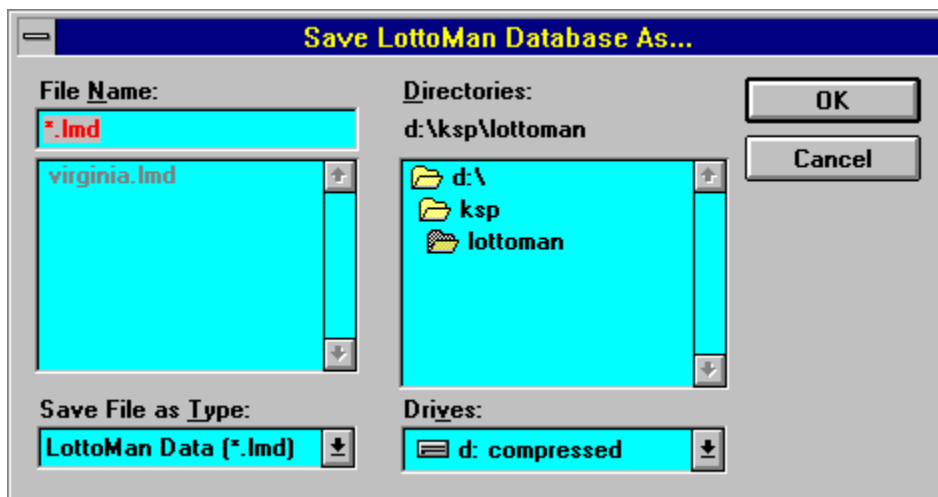
If you are working with a new file which has not yet been saved to disk, using the Save option is identical to using the Save As option. For details on saving a new file to disk, see the File/Save As topic.

Saving A File With A New Name

To access the File/Save As option, press Alt-F then A, or click on the File option in the main menu then click on Save As The File/Save As... option permits you to save an existing file under a new name or to save a new file for the first time. If the file already exists or has been saved to disk before and you do not want to change the name of the file, you do not need to use the Save As option. Alternatively, you should use the File/Save option. If you want to close the file, use the File/Close option which will give you the option of saving a new game or any changes you've made to the current game before it closes the file.

NOTE: When you save a file with this option, the entire file is copied to the new file name then the changes made to the current game are written to the new file.

Saving a file with a new name - by the numbers



- 1 When you are done working on the new game you have just created, or if you wish to copy the current game to a new file, click on the File option in the main menu, or press Alt-F to bring up the File menu.
- 2 Click on Save As, press A or use the arrow keys to move the highlight to the words "Save As..." then press Enter.
- 3 If the correct drive and directory are not already open, enter the correct path or select the correct drive and directory from the dialog.
- 4 Enter a new name for your database. All LottoMan data files have the extension .LMD

NOTE: You may select one of the file names listed in the dialog, however, beware! If you use an existing file name, your new file will replace it and overwrite whatever was in the original file which will be forever gone. The program will ask you to verify this is what you mean to do before it will allow you to overwrite an existing file.

- 5 When you are satisfied that the drive, directory and file name are what you want, Click on OK, press Enter or press Tab until the OK button is selected then press Enter.

NOTE: You can cancel the save at any time by pressing Escape (Esc on your keyboard), clicking on the Cancel button, or press Tab until the Cancel button is selected and press Enter.

Once you have either saved the file to disk or canceled the save, you will be returned to the current game where you may continue to work.

Rebuild Database

Any time you delete past winning plays or user plays, from your database, LottoMan flags the records as deleted but does not physically remove them from your database. As time passes, the database will begin to consume a good deal of disk space that it is not using. The same is true of deleting a game from a database; the deleted game entry and records are still occupying space in the file. You can use the rebuild option to purge these unused records from the database.

Further, for one reason or another, a database may become corrupt or damaged as a result of a defect on your disk drive or any of a host of other possibilities. If you get a corrupt message when you attempt to open your database, you can try rebuilding it to see if LottoMan can recover the damaged data. This may, or may not, work and you will almost always lose at least some data. However, it is far better to lose a little than everything.

To use the rebuild option, click on the File option in the main menu then click on rebuild or press Alt-F then R. If there is an open game in the main data view, LottoMan will close it. The program will display a file selection dialog exactly as it does when opening a file. Select the file that needs to be rebuilt exactly as though you wanted to open the file. The program will then attempt rebuild the file and will purge all deleted records.

To try and document all of the possible messages, dialogs and options that might be presented would require far more discussion than the scope of this help file is intended to cover. In general, all problems encountered will be presented to you with a description of the problem encountered and the choices you have available to fix the problem. Follow directions carefully.

Print Graph

This option will print the graph that is currently being displayed in your main data view window. If the numerical analysis option is selected, this will be the confidence index graph. Otherwise, the graph printed will be the historical data graph. To access this option click on the File option in the main menu then click on Print Graph or press Alt-F then G.

After you select this option Windows will display the printer setup dialog. This permits you to specify which printer you want to print the graph on and to make any adjustments you like. By default, graphs will print in portrait mode. This means that the Y axis (up and down on the graph) will print along the long edge of the paper and the X axis will print across the short edge of the paper. As an alternative, you can use the landscape mode which will reverse the order and put the Y axis on the short side of the paper and the X axis on the long side. To change between portrait and landscape, select the Setup option in the printer setup dialog and then select either portrait or landscape from the dialog that is displayed. When you are satisfied with the printer you have selected, click on OK and the printing will start.

NOTE: You can print any graph within the LottoMan program by clicking the right mouse button on the graph you want to print.

NOTE: When printing the historical data graph on a HP LaserJet IIp with 512k of memory, you are likely to experience out of memory problems. To prevent this error, only print two picks at a time or upgrade your printer to 1meg, or more, of memory. This error is a function of how PCL printers handle diagonal lines.

Print History

This option will print the list of past winning plays for the current game. To access this option click on the File option in the main menu then click on Print History or press Alt-F then H.

After you select this option Windows will display the printer setup dialog. This permits you to specify which printer you want to print the list on and to make any adjustments you like. By default, lists will print in portrait mode. This means that the list will be printed in columns from top to bottom along the long edge of the paper and left to right across the short edge of the paper. As an alternative, you can use the landscape mode which will reverse the order and put the columns across the long edge from top to bottom along the short edge. To change between portrait and landscape, select the Setup option in the printer setup dialog and then select either portrait or landscape from the dialog that is displayed.

This dialog also permits you to specify which records you would like to print via the Pages option. This is something of a misnomer as each "page" is actually just one winning play. At any rate, to print a range of plays, selected the pages option then specify the first and last record you want to print. Otherwise, you can use the All option to print the entire contents of the list. When you are satisfied with the printer you have selected, and which records are to be printed, click on OK and the printing will start.

Print Plays

This option will print the list of your plays (user plays) for the current game. To access this option click on the File option in the main menu then click on Print History or press Alt-F then P.

After you select this option Windows will display the printer setup dialog. This permits you to specify which printer you want to print the list on and to make any adjustments you like. By default, lists will print in portrait mode. This means that the list will be printed in columns from top to bottom along the long edge of the paper and left to right across the short edge of the paper. As an alternative, you can use the landscape mode which will reverse the order and put the columns across the long edge from top to bottom along the short edge. To change between portrait and landscape, select the Setup option in the printer setup dialog and then select either portrait or landscape from the dialog that is displayed.

This dialog also permits you to specify which records you would like to print via the Pages option. This is something of a misnomer as each "page" is actually just one winning play. At any rate, to print a range of plays, selected the pages option then specify the first and last record you want to print. Otherwise, you can use the All option to print the entire contents of the list. When you are satisfied with the printer you have selected, and which records are to be printed, click on OK and the printing will start.

Printer Setup

This option permits you to define the default settings for printing the lists of past winning plays and user plays. This option does not define the default settings for printing graphs. To access this option, click on the File option in the main menu then click on printer setup or press Alt-F then T.

After you select this option, Windows will display the printer selection dialog. Use this dialog to choose which printer will be used for printing your lists. You can also use the Setup button to configure the printer. The configuration options will vary according to the printer you select, but, typically include options for orientation on the paper (portrait or landscape), print quality, paper size, paper source and so on. When you are satisfied with your selection, click on OK to close the dialog and your settings will be saved for the duration of this run of the LottoMan program.

Exiting The Program

To access the File/Exit option, click on the File option in the main menu then click on Exit, press Alt-F then X or press Alt-F4 to exit without using the menus. You can also exit the program by clicking on the System Menu icon and selecting Close or by double clicking on the System Menu icon. Both of these actions behave exactly as though you had selected the File/Exit option.

You do not have to save or close your file before you exit the program. In the event that the file is new, the game is new or you have changed the contents of the game, the program will ask you whether or not you want to save the game to disk before you continue. The dialog below is a sample of the message that the Program will display. You have the option of saving the changes, discarding the changes or canceling the exit operation and returning to the current game. If the file you are working is not a new file, the changes will be saved and the program will terminate. If this is a new file, you will be given the chance to select a new file name exactly as though you had used the File/Save As option.



NOTE: If you choose not to save the changes, they are forever lost.

Edit Menu

E dit <u>G</u> ame <u>O</u> ptions <u>T</u>
I n <u>sert</u>
<u>D</u> elete
<u>E</u> dit
<u>S</u> elect
<u>F</u> ilter Your Plays
Find <u>M</u> issing Dates
<u>R</u> ecalculate F5

To access the Edit menu, press Alt-E or click on the Edit option in the main menu. The Edit menu is provided as a means of managing your lottery history. The following sections detail each of the Edit menu options. For more information on any one of the menu options, just click on the menu item or select from the list below. All of the options in this menu can also be performed by using the associated buttons in the main data view window.

Data Manipulating Options

- [Inserting New Plays](#)
- [Deleting Existing Plays](#)
- [Editing Existing Plays](#)

Data Selection Options

16	10/05/1994
1?	10/05/1994

[Selecting Plays For Editing, Deleting or Analysis](#)

Numerical Analysis Options

No Button Available	Filter Your Plays
<input type="checkbox"/> Find Missing Dates	
Recalculate	Performing Analysis On The Selected Plays

Selecting The Plays To Work With

In order to edit a records, delete a record or to perform numerical analysis on a specific group of records, you must first select a set of records to be used. The sections at the end of this topic describe this process using the mouse or the keyboard in place of the menu option. To access the Select option, click on the Edit option in the main menu then click on Select or press Alt-E then S.



Use the play ID buttons (i.e. 401, 402, etc.) to skip the menus and select dialog in selecting a group of records.

Selecting records - by the numbers

Select Records For Processing

Enter the first and last record numbers for the range you want to select. Use the numbers on the buttons to the far left of the table.

Start

End

OK Cancel Help

- 1 Click on the Edit option in the main menu or press Alt-E
- 2 Click on the select option in the edit menu or press S.

The Select Records For Processing dialog shown above will be displayed

- 3 Enter the first record ID number in the Start edit box.
- 4 Enter the last record ID number in the End edit box.
- 5 Click OK or press Tab until the OK button is highlighted and press Enter, the selected records will be highlighted and the dialog removed from the screen..

NOTE: You can click Cancel at any time and the current list of selected records will be left unchanged.

Selecting records via the keyboard - by the numbers

- 1 Click anywhere inside the data table on the left side of the main data view.
- 2 Use the up and down arrow, page up or page down, ctrl-home or ctrl-end to scroll the table up or down until the first record you want to select is visible.
- 3 Use the up arrow or down arrow key to move the small white box (visible inside the table) up or down until it is on the same line as the first record you want to use.
- 4 Press the spacebar to use highlight the record. The background will turn dark gray.
- 5 Press and hold the shift key.

- 6 Use the up and down arrows, page up or page down or ctrl-end to scroll the table until the last record you want to use is visible.
- 7 Use the up or down arrow key until the last record you want to select is highlighted and the remaining record are left in the normal light gray background color.
- 8 Release the shift key.

Selecting records with a mouse - by the numbers

- 1 Use the scroll bar on the right side of the table to scroll the table up or down until the first record you want to select is visible.
- 2 Click on the button on the left side of the line (the one with the ID number in it) and hold the mouse button down.
- 3 Move the mouse pointer to the last record you want to select and release the left button.

When you are done selecting the records, you are ready to edit or delete the records you've selected or to click on recalculate or use the Edit/Recalculate option to analyze the records you selected.

Filter Your Plays

To access the [Filter Your Plays](#) option, click on the [Edit](#) option in the [Main Menu](#) then click on [Filter Your Plays](#), or, press Alt-E then F. This option permits you to post-process the plays you have created, entered or wheeled and eliminate those plays that do not fit the high probability win patterns for your game.

In order to use this option effectively, you need to be familiar with the [number theory](#) and the various analysis tables provided with the program. You'll need to know which patterns of numbers win most often and which ones are poor bets. With that information in hand, you can set any combination of rules via the Filter Settings [dialog](#) shown below. When you are satisfied with your settings, click on OK and [LottoMan](#) will [delete](#) any [user plays](#) in the database which violate the rules you specified. If you change your mind and choose not to run the Filter, click Cancel and you'll be returned to [the main data view](#). Note that you can only filter plays for one date at a time.

For a description of what each Filter Setting option does, click on the area of interest on the example below. You should have already read the topic on [Understanding The Tables](#) and the description of the individual tables before you try to use this feature of [LottoMan](#).

User Play Filter Options	
Delete Odd Number Counts <input type="checkbox"/> Below <input type="text" value="0"/> <input type="checkbox"/> Above <input type="text" value="5"/>	Delete Plays With Duplicate <input type="checkbox"/> Ones Below <input type="text" value="8"/> <input type="checkbox"/> Tens Below <input type="text" value="0"/> <input type="checkbox"/> Ones Above <input type="text" value="5"/> <input type="checkbox"/> Tens Above <input type="text" value="5"/>
Delete Sum Values <input type="checkbox"/> Below <input type="text" value="21"/> <input type="checkbox"/> Above <input type="text" value="279"/>	
Delete Plays Previously Drawn <input type="checkbox"/> Less Than <input type="text" value="0"/> Time(s) <input type="checkbox"/> More Than <input type="text" value="1"/> Time(s)	Play Date To Filter: <input type="text" value="11/26/1994"/>
<input type="button" value="OK"/> <input type="button" value="Cancel"/> <input type="button" value="Help"/>	

Find Missing Dates

This option scans your database in two passes looking for all duplicate dates, invalid dates and missing dates.

In the first pass, it will locate and display any record which falls on an invalid drawing date according to the current game description. In other words, if your game is drawn on Wednesday and Saturday and the scan finds a draw on a Friday, it will post a message alerting you to the discrepancy and permit you to edit the record in order to enter a valid draw date. Note that program can not tell when the rules for the game has changed, thus, if your game used to draw on Wednesday and now draws on Saturday, it will think the old Wednesday draws are invalid dates, even though they are not. You need to be aware of when rules changed for the game. In the event the program finds two or more draws on the same date, it will post a message alerting you to the date on which the duplication appears. You will have to go back and edit the history table, when the scan is finished, to remedy this error.

In the second pass, the program will scan the entire database looking for draws that are missing. This is done by looking at the date for each draw in the database and looking ahead to when the next draw should take place. If the next record is not on the expected date, you will get a message alerting you to the missing draw and the opportunity to enter a record for that date. As before, this search is based on the current game definition. Thus, if the game currently draws twice a week and used to draw once a week, the program will think it is missing draws in the early going. Again, you need to be aware of when the rules for your game changed and ignore any complaints prior to that date.

Performing Numerical Analysis

Any time you make changes to the list of winning plays or to the number of records you want to use for analysis, you will need to recalculate the history in order to build new ranking tables that match the current data. If the program does not automatically prompt you for recalculating when you make changes, or you change the selection list, you can force a recalc by clicking on the Edit option in the main menu then click Recalculate, press Alt-E then R or use the recalculate button in the main data view.

NOTE: LottoMan will save the current tables with the file. Thus, you do not need to recalculate unless you change the data or change the list of selected records. Once a recalc has been performed, there is no need to do it again, even if you are changing visible picks, upper or lower limits, or methods used.



use the recalc button to skip the menus.

Game Menu

Game	Options	Ia
New	Alt F3	
E dit		
D elete		
V iew		
S elect	F3	
I mport...		▶
E xport...		▶

To access the Game menu, click on the Game option in the main menu or press Alt-G. The game menu provides options for adding games to the open database, selecting a game, removing games from the database, viewing game settings and sharing game data with other programs. To learn more about each of these options, click on the option in the menu or select one from the following list.

Game Options

[Adding A New Game To The Current File](#)

[Edit Game Settings](#)

[Deleting A Game From The File](#)

[Viewing The Current Game Options](#)

Choosing The Current Game

[Selecting A Game From The Current File](#)

Data Sharing Options

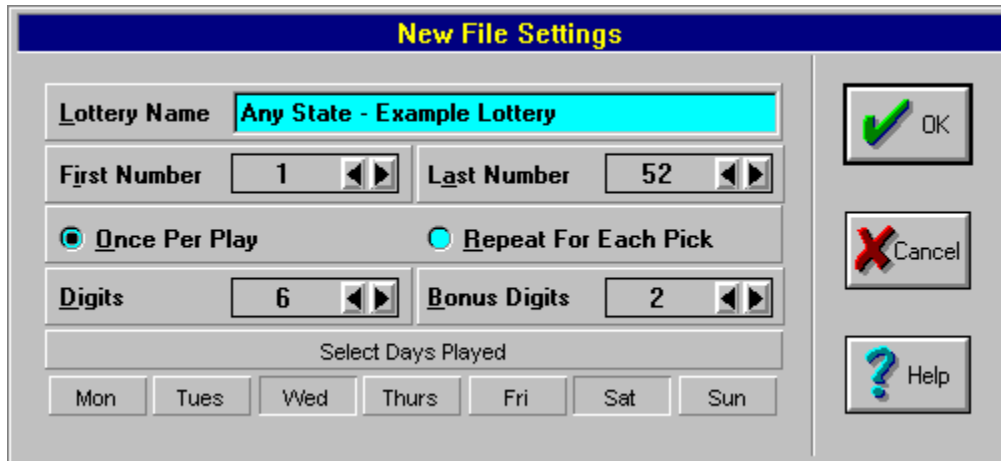
[Importing Games To The File](#)

[Exporting Games From The File](#)

Adding A New Game

To access the Game/New option, press Alt-G then N, click on the Game option in the main menu then click on New Game or press Alt-F5. The New Game option is intended to allow you to add a new lottery game to an existing LottoMan data file. If you want to create a new file from scratch, you should use the File/New option. If you want to open an existing data file, use File/Open, and, to open a different game already in the current file, use Game/Select.

Game Option Descriptions



The game options dialog is displayed whenever you select Game/New from the menu. This dialog is how you define the characteristics of the new lottery. For information about any part of the dialog, click on the area you need help with or select from the list that follows.

Lottery Name
First Number
Last Number
Drawing Method
Number Of Picks
Bonus Digits
Drawing Days
Game Options OK
Game Options Cancel
Help Button

Creating a new game - by the numbers

- 1 Select the Game menu by pressing Alt-G or clicking on the Game option in the main menu.
- 2 Select the New option by clicking on New, pressing N or using the up and down arrow keys to highlight the word New then press Enter.

NOTE: You can combine steps 1 & 2 by pressing Alt-F5

- 3 Enter a name for your lottery.

- 4 Set the values of the first and last numbers used in the lottery. i.e. Pick 3 uses 0-9 and Lotto uses 1-44.
- 5 Indicate how the lottery uses its numbers... Once per draw or repeated for each pick.
- 6 Set the number of picks that go to make a single play.
- 7 Specify how many bonus digits are allowed (if any).
- 8 Turn off the buttons for any days of the week on which the lottery is not played (buttons should be up for those days).
- 9 To accept these settings, click on OK or press Tab until the OK button is selected then press Enter. If you change your mind and decide not to add a new game to the file, click on Cancel, press Escape (Esc on your keyboard) or press Tab until the Cancel button is selected then press Enter.

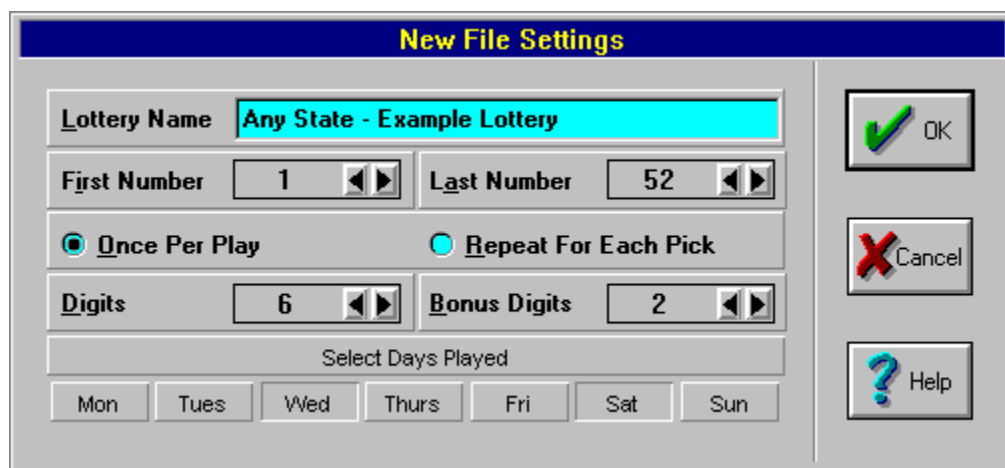
NOTE: Once you click OK, there is no going back and changing the settings for a game. Be careful and make sure all settings are correct.

Once you have clicked OK, the program will clear the options dialog and the contents of the data view window. You may then begin to work on the new game, add history, set methods and limits, etc. When you are done working, use the File/Save option to write the new game to the file. If you decide you don't want to save the new game and work, you can close the file without saving it if you have not done a save since you selected the Game/New option.

Edit Game Settings

To access the Game/Edit option, press Alt-G then E or click on the Game option in the main menu then click on Edit. The Edit option is intended to allow you to change a game's name or the days on which it is drawn. If you want to create a new file from scratch, you should use the File/New option. Use Game/New to create a new game from scratch within the current game database. If you want to open an existing data file, use File/Open, and, to open a different game already in the current file, use Game/Select.

You can not change the number of picks in the game, the number of bonus digits in the game, the first or last number or how the numbers are used. These are all items that define the statistical nature of the game and changes in these rules would make the past history completely meaningless in your analysis of the game.



The game options dialog is displayed whenever you select Game/Edit from the menu. This dialog is how you define the characteristics of the current lottery. For information about any part of the dialog, click on the area you need help with or select from the list that follows. Note that the first and last number fields, the drawing method, number of picks and number of bonus digits can not be altered.

Changing the game's name

To change the name of the current game or fix one of my numerous typing errors, simply enter the correct game name into the Lottery Name edit box and click OK. The new name will be shown in the program's main window caption and saved along with the other game data when you next save the current game to disk. If you close the game without saving changes, the new name will not be saved.

Changing drawing days

It is not at all uncommon for lotteries to change the days on which they are drawn. For that matter, I am also constantly reminded of various game databases included with LottoMan which do not reflect the correct drawing days. To update a the current game to reflect changes in drawing dates of fix one of my out-of-date databases, click on the buttons for the days you need to change. Remember that if the button is pressed, that is a drawing day. If the button is raised, that is not a drawing day for the current game. When you are done making your changes, click OK and the new drawing dates will go into effect immediately. The changes will also be saved when you next save the current game. If you

close the current game without saving changes, the drawing date changes will not be saved.

Delete Game

This option will remove the current game from the current database. In other words, it will delete the game that is being displayed in the main data view from the file in which it was stored. If the game you are deleting is the only game in the database file, the file will also be deleted. To select this option, click on the Game option in the main menu then click on Delete or press Alt-G then D.

After you delete the game, the file is closed but the game will remain in memory and visible in your main data view. You may then save the game into a new file (use the File/Save As option) or you can use the File/Close option and choose not to save the game to complete the deletion. Note that once you delete the game from the file, it can not be placed back into the file. If you select the Save As option and select the old file, you will overwrite the file and lose all of the other game data that was in that file. Also, once you close the game, without saving it, it is forever gone and can not be recovered via rebuild or any other option.

NOTE: Deleting a game does not physically remove the deleted records from the database file in which it was stored. To purge the deleted records, you will need to use the File/Rebuild option.

Viewing A Game's Definition

To access the Game/View Definition option, click on the Game option in the main menu then on the View Definition option in the Game menu, or press Alt-G then press V. The View Definition option displays a dialog, shown below, which list the parameters that define the current lottery game. These include the name of the game, the range of numbers used, how many numbers make up the game, the number of bonus digits and the days on which the game is drawn. When you are done viewing the information, click on OK and the program will return to the game.

LottoMan Game Definition	
Lottery Name:	Virginia Lottery - Lotto
Number of Picks Per Play:	6, <Odds: 1 in 7,059,052>
First Number:	1
Last Number:	44
Bonus Numbers:	0
Use numbers once per draw	
Days Played:	<Wed> <Sat>
	

Selecting A Game

To access the Game/Select option, click on the Game option in the main menu then click on Select Game, press Alt-G then S or press F3 to select a game without using the menus. If you want to use a different file than the current file, you need to use the File/Open option. If you want to add a new game to the database, use the Game/New option. If there is only one game in the current file, the Select Game option has no effect.

Selecting a game - by the numbers



- 1 Click on the Game option in the main menu or press Alt-G to access the game menu.
- 2 Click on the Select Game option, press S or use the up and down arrow keys to highlight the Select Game option then press Enter.

NOTE: You can combine steps 1 & 2 by pressing F3.

- 3 Click on the game you want to load or press Tab until the game list is active then use the up and down arrow keys to select the correct game.
- 4 Click on the OK button or press Tab until the OK button is selected then press Enter. You can cancel the game selection and return to the current game at any time by clicking on Cancel or pressing Tab until the Cancel button is selected and press Enter.

NOTE: You can combine steps 3 & 4 by double clicking on the game you want to load. This will select the game and load it in a single step.

Once you have selected the game, LottoMan will load it from the file and you may go on to edit the history, select methods and limits, perform analysis, and so on. You do not have to close the current file or save the current game before selecting a new game from the same file. If you have made any changes to the game, you will be given the chance to save those changes before the next game is loaded. The following is a sample of the message you will be given if the current game needs to be saved. It gives you the option of saving the game, not saving it or canceling the switch to the new game and returning to the current game.



Importing Games To The File

The import option gives you the ability to read data from other lottery program's databases or from a simple ASCII delimited file into the LottoMan database. To use this option, you must first open a valid LottoMan game. It is important that the game you open has the same number of picks per play as the file you will be importing. The following is a listing of each existing import option. New import options will be added as we get our hands on the data files and muddle our way through their organization.

If you have another lottery program you are using, which is not listed, and would like LottoMan to be able to import from that program's databases, please send a copy of the database to us along with a complete description of the lottery (number of picks, lowest number, highest number, etc. or better still create a LottoMan database with a game defined to match the one you want to import and send that to us, as well. ZIP the files up and mail them to Lighthouse Engineering or send them via E-Mail on CompuServe to 74151,1035. PLEASE DO NOT SEND US ANY EXECUTABLE PROGRAMS! THAT IS A VIOLATION OF COPYRIGHT LAW. SEND DATA FILES ONLY. *If* we can figure out the organization of the data file, we will add an import option for that file and send you a new LottoMan executable (at no charge) which supports importing from that format.

ASCII Delimited

This format is a plain text format which could be created via any text editor or is often available as an export option in other programs (like spreadsheet programs and databases). A valid ASCII delimited file should be organized so that one play appears per line starting with the date in month / day / year format (MM/DD/YYYY), following the date would be each pick, in order, from first to last. (If the lottery is an unordered game like Lotto, LottoMan will sort the picks after reading them from the import file) Each pick should be separated with a comma. An example of ASCII delimited text for a pick 6 lottery (like Lotto) is shown below.

Example

```
01/27/1990,06,19,35,39,42,%02  
02/03/1990,09,11,13,20,36,%02
```

LottoGold

This is a program used by my father-in-law. Naturally, to keep the peace, it was the first one I had to figure out <grin>. LottoGold uses a pair of files for each lottery game. The file containing all of the data has the extension .RES. Define a game which uses the same number of picks as the LottoGold game you want to import and select this option. Select the LottoGold file to import and go. LottoMan will load the data into your LottoMan database from the .RES file. LottoMan does not try to figure out LottoGold's definition of the game.

Ultimate Lottery Tracker And Wheeler

The Ultimate Lottery Tracker And Wheeler uses a file containing all of the data with the extension .UTW. Define a game which uses the same number of picks as the game you want to import and select this option. Select the file to import and go. LottoMan will load the data into your LottoMan database from the .UTW file.

Exporting Games From The File

The export option gives you the ability to write data from LottoMan's databases to either an ASCII delimited output file or to another program's databases. To use this option, you must first open a valid LottoMan game. It is important the game you open has the same number of picks per play as the file you will be exporting to. The following is a listing of each existing export option. New export options will be added as we get our hands on the data files and muddle our way through their organization.

If you have another lottery program you are using, which is not listed, and would like LottoMan to be able to export to that program's databases, please send a copy of the database to us along with a complete description of the lottery (number of picks, lowest number, highest number, etc. ZIP the files up and mail them to Lighthouse Engineering or send them via E-Mail on CompuServe to 74151,1035. PLEASE DO NOT SEND US ANY EXECUTABLE PROGRAMS! THAT IS A VIOLATION OF COPYRIGHT LAW. SEND DATA FILES ONLY. *If* we can figure out the organization of the data file, we will add an export option for that file and send you a new LottoMan executable (at no charge) which supports importing from that format. In general, exporting is far more difficult and less reliable than importing.

ASCII Delimited

This format is a plain text format which could be read via any text editor or is often available as an import option in other programs (like spreadsheet programs and databases). The ASCII delimited file will be organized so that one play appears per line starting with the date in month / day / year format (MM/DD/YYYY), following the date will be each pick, in order, from first to last. Each pick will be separated with a comma. An example of ASCII delimited text for a pick 6 lottery (like Lotto) is shown below.

Example

```
01/27/1990,06,19,35,39,42,%02  
02/03/1990,09,11,13,20,36,%02
```

Options Menu

Options <u>View</u>
Aging
<u>D</u> elta
<u>F</u> requency
<u>T</u> rend
Pick <u>1</u>
Pick <u>2</u>
Pick <u>3</u>
Pick <u>4</u>
Pick <u>5</u>
Pick <u>6</u>
<u>B</u> onus 1
<u>B</u> onus 2

To access the Options menu, click on the Options option in the main menu or press Alt-O. The Options menu provides options for determining which methods are used in analysis and whether or not individual picks or bonus picks are displayed in the graphs. These options can all be controlled via the associated buttons in the main data view. To learn more about each of these options, click on the option in the menu or select one from the following list.

Methods of Analysis	
<input checked="" type="checkbox"/> Aging	<input checked="" type="checkbox"/> Frequency
<input checked="" type="checkbox"/> Delta	<input type="checkbox"/> Trend

Numerical Analysis Options

Pick Display Options

Bonus 1	<input type="checkbox"/> 100	<input type="checkbox"/> 0
Bonus 2	<input type="checkbox"/> 100	<input type="checkbox"/> 0

Bonus Display Options

Tables Menu

Tables View Wh
Number History
A ssociates
P airs
T riads
O dd And Even
S ums
D oubles
T riples
Q uads
D uplications
T ens Duplicates
O nes Duplicates
P artitions

To access the Tables menu, click on the Tables option in the main menu or press Alt-T. The Tables menu provides options for examining current statistical data and history for individual numbers and combinations of numbers within the current game. To learn more about each of these options, click on the option in the menu or select one from the following list.

[Basic Table Features](#)

The general tables

- [Number History Table](#)
- [Associates Table](#)
- [Pairs Table](#)
- [Triads Table](#)
- [Odd And Even Table](#)
- [Sums Table](#)

The ordered game tables

- [Doubles Table](#)
- [Triples Table](#)
- [Quads Table](#)
- [Duplicates Table](#)

The unordered game tables

- [Tens Duplicates Table](#)
- [Ones Duplicates Table](#)
- [Partitions Table](#)

View Menu

View <u>W</u> heels	
H istorical Data	F5
N umerical Analysis	F6
P lay History	F7
Y our Plays	F8
N umber <u>W</u> heel	F9
S elf Test	
V ector Analysis	

To access the View menu, click on the View option in the main menu or press Alt-V. The view menu provides control over the graphical display, viewing the self test, historical plays and your plays and picking numbers. For more information on each of these options, select from the list below or click on the option in the menu shown above.

Selecting the graph view

- [Historical Data](#)
- [Numerical Analysis](#)

Selecting the table view

- [Play History](#)
- [Your Plays](#)

Viewing special processes

- [Number Wheel](#)
- [Self Test](#)
- [Vector Analysis](#)

Wheels Menu

Wheels

New

Edit

Delete

View

To access the Wheels menu, click on the Wheels option in the main menu or press Alt-W. The wheels menu provides the means to create, edit, view or delete custom wheels. For more information on each of these options, select from the list below or click on the option in the menu shown above.

[New Wheel](#)

[Edit Wheel](#)

[Delete Wheel](#)

[View Wheel](#)

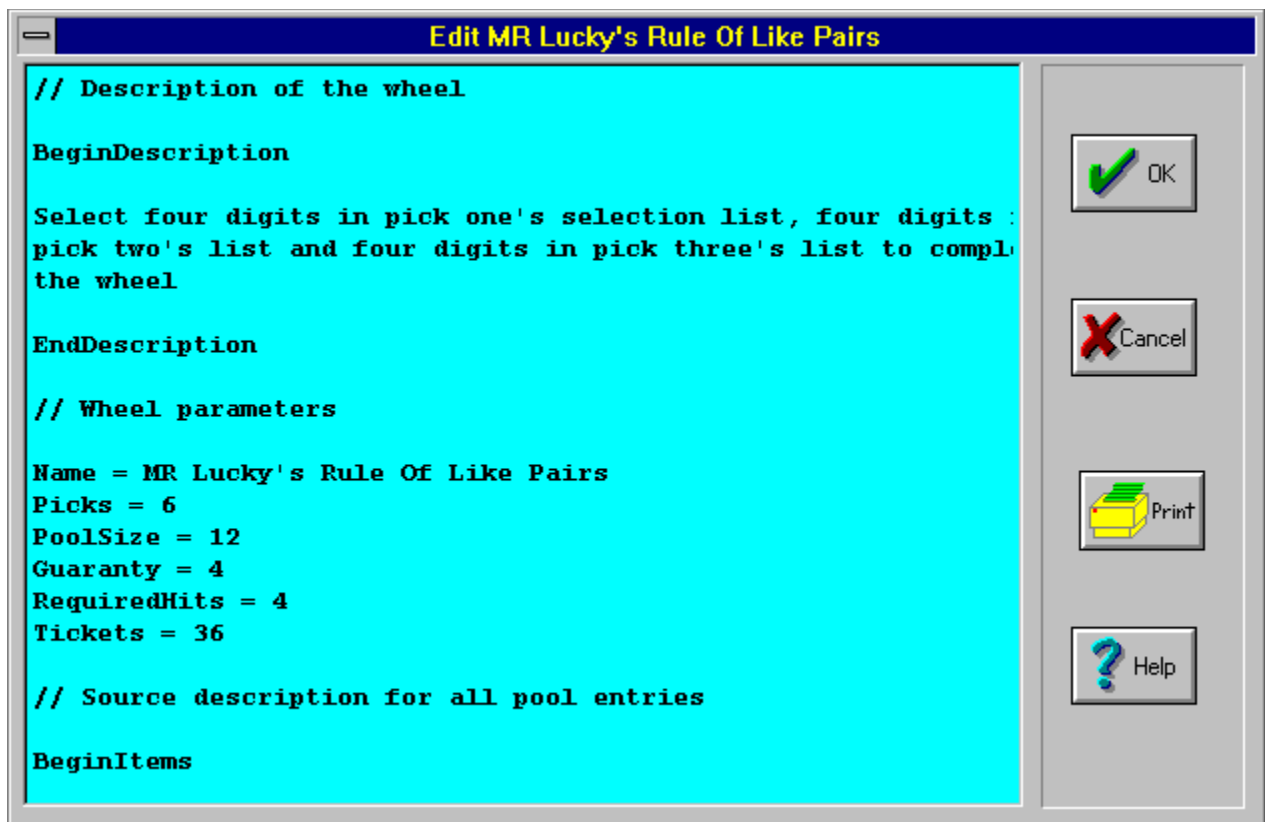
New Wheel

This option creates an entirely new custom wheel to be added to LottoMan's database of custom wheels. To access this option, click on the Wheels option in the Main Menu or press Alt-W, then click on New or press N.

Lottoman will display a blank template for the new cusatom wheel. The template contains all of the required fields for a custom wheel in the correct order. Fill in the missing data, Item descriptions and play templates. When you are done editing the new wheel, click OK and the program will compile the new wheel and store it in the database of sustom wheels You can click Cancel at any time to close the editor and return to the program.

In the event there are any errors in the instructions, the compiiler will display a message describing the error and return to the editor so that you can fix it. For information on the various parts of the editor window, click on the area of interest in the example at the end of this topic.

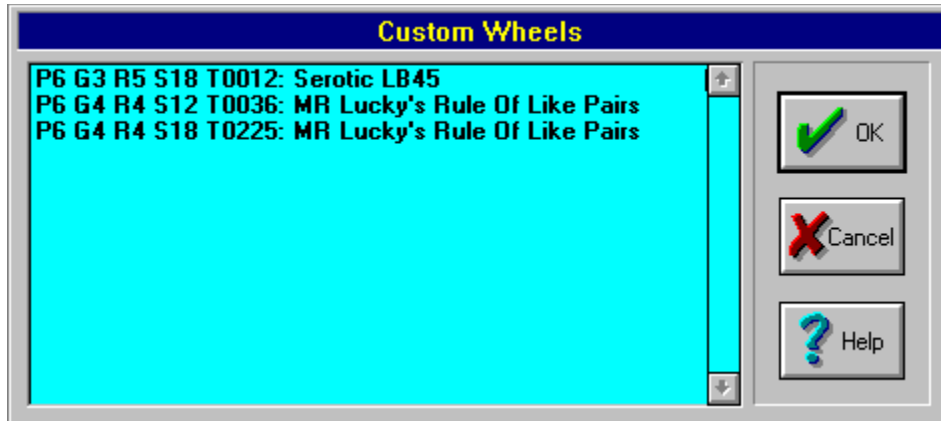
Wheel Editing Commands (Custom Wheel Instructions/Language)



Edit Wheel

This option displays the contents of any of the available custom wheels and allows you to modify the instructions that generate the plays associated with that wheel.

To use this option, click on the Wheel option in the main menu or press Alt-W, then click on the Edit option or press E. LottoMan will display a list of available wheels as shown below. Select the wheel you wish to edit from this list and click OK to edit that wheel. You can click Cancel at any time to close the editor and return to the program.



After you have selected a wheel to edit, the program will display the instruction set for the wheel. Use the arrow keys to scroll through the listing, etc., and make any required changes to the wheel. When you are done editing the wheel, click OK and the program will compile your changes and save them back to the custom wheel database. You can click Cancel at any time to abort the edit and return to the program without compiling the wheel or saving your changes to disk.

In the event there are any errors in the instructions, the compiler will display a message describing the error and return to the editor so that you can fix it. For information on the various parts of the editor window, click on the area of interest in the example at the end of this topic.

Wheel Editing Commands (Custom Wheel Instructions/Language)

Edit MR Lucky's Rule Of Like Pairs

```
// Description of the wheel
```

```
BeginDescription
```

```
Select four digits in pick one's selection list, four digits :  
pick two's list and four digits in pick three's list to complete  
the wheel
```

```
EndDescription
```

```
// Wheel parameters
```

```
Name = MR Lucky's Rule Of Like Pairs
```

```
Picks = 6
```

```
PoolSize = 12
```

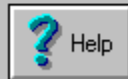
```
Guaranty = 4
```

```
RequiredHits = 4
```

```
Tickets = 36
```

```
// Source description for all pool entries
```

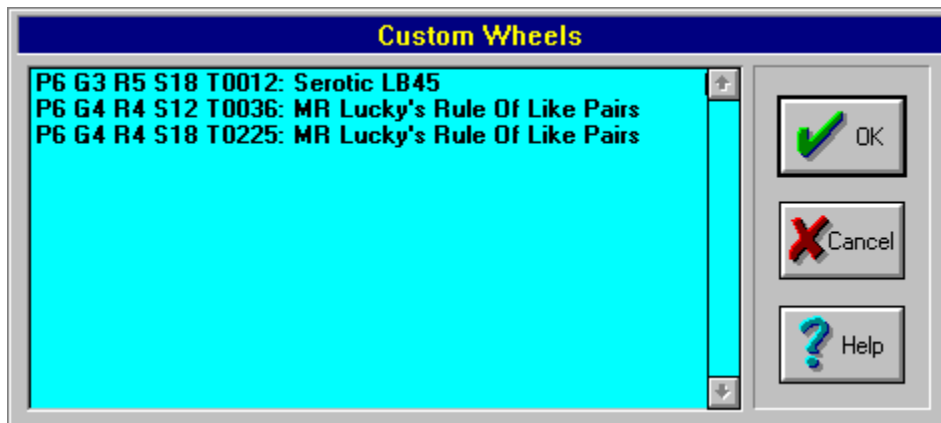
```
BeginItems
```



Delete Wheel

This option allows you to remove a wheel from LottoMan's database. Once a wheel has been deleted it can not be recovered and will not be accessible to any game. Note that deleting a wheel does not delete it for the current game only. Rather, it deletes it for every game in the LottoMan system.

To use this option, click on the Wheel option in the main menu or press Alt-W, then click on the Delete option or press D. LottoMan will display a list of available wheels as show below. Select the wheel you wish to delete from this list and click OK to delete that wheel. You can click Cancel at any time to close the list and return to the program without completing the deletion.

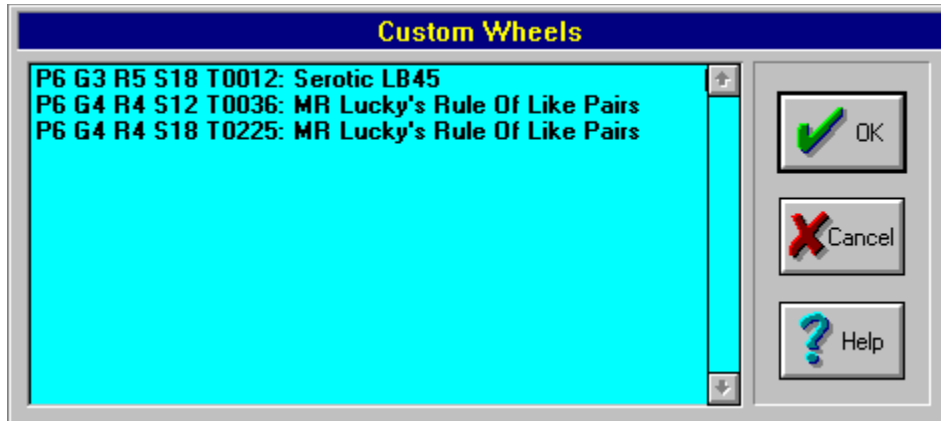


After you have selected a wheel to delete, the program will display a short description of the wheel so that you can verify that it is the one you want to delete. Click OK to delete the wheel or click Cancel to return to the program without deleting it.

View Wheel

This option displays the contents of any of the available custom wheels. While you can not modify the wheel via this option, you can view and print the instructions that define the wheel.

To use this option, click on the Wheel option in the main menu or press Alt-W, then click on the View option or press V. LottoMan will display a list of available wheels as show below. Select the wheel you wish to view from this list and click OK to view that wheel. You can click Cancel at any time to close the list and return to the program.



After you have selected a wheel to view, the program will display the instruction set for the wheel. use the arrow keys to scroll through the listing, etc. When you are done viewing the wheel, click OK or Cancel to close the vview and return to the program. You can also use the Print button to print a copy of the wheel's instruction set.

Help Menu

	Help
C ontents...	F1
I ndex...	
U sing Help...	
L icense Agreement	
A bout...	

To access the Help menu, click on the Help option in the main menu or press Alt-H. The help menu provides access to the on-line reference material contained in this help file. For information about each of the help menu options click on the option in the menu above or select the option from the list below.

- [Contents](#)
- [Index](#)
- [Using Help](#)
- [License Agreement](#)
- [About](#)

Help Contents

This option displays the main contents page of this help file. To access this option, click on the Help option in the main menu then click on Contents, Press Alt-H then C or press F1.

Help Index

This option displays the list of search words for this help file. From that list you can select a help topic to be displayed. In brief, enter a word to search for in the edit box at the top of the list or select a keyword from the list that appears under it and the keyword will appear in the edit box. Then click Show Topics and a list of all topics related to that keyword will appear in the list at the bottom of the search window. Select a topic from the list and press Go To. This help file will then be displayed on the help page you selected. This operation is the same as clicking the Search button in the help window when it is being displayed.

For a more detailed description on using the Window help engine (and therefor this help file) use the Help/Using Help option.

Using Help

This option displays the Windows help system's reference which describes how to use the help system. If you are not familiar with Windows and the help files that it uses (such as this file) you should use this option in order to learn how to get the most out of this help file. To access the using Help option, click on the Help option in the main menu then click on using help or press Alt-H then U.

License Agreement Option

This option displays the licensing agreement that is provided with this copy of LottoMan. PLEASE take the time to look this agreement over so that you clearly understand the terms under which you may use this program. Please note that this version of LottoMan is not the shareware version and distribution of copies is strictly prohibited.

Help About

This option displays a window which describes the current version of the LottoMan program you are using, copyright notice, etc. It also provides access to the Licensing Agreement and Registration information that applies to this Shareware version of LottoMan. To access this option click on the Help option in the main menu then click on About or press Alt-H then A. This window is, by the way, the same window that is displayed when you start the LottoMan program.

System Menu



The system menu appears as a small bar in the top left hand corner of the LottoMan program's window. To access the menu, click on the bar with the mouse or press the Alt key and the spacebar. This menu offers access to some generation operations that are consistent across all Windows programs. This includes minimizing and maximizing the window, moving the window, closing the program, etc. For a detailed description of each option, click on the option in the menu above or select from the list below.

- [Restore](#)
- [Move](#)
- [Size](#)
- [Minimize](#)
- [Maximize](#)
- [Close](#)
- [Switch To](#)

Restore Option

This option is only available when you have minimized or maximized LottoMan. That is, LottoMan appears as a small icon at the bottom of your display (as shown below) or it completely fills your screen. To restore the program's window to the same size it had and in the same location as when you minimized it, click on the Icon and press R or click on the Restore option. As an alternative to the restore option, look at the top right hand corner of the LottoMan window. If a double arrow (up and down) appear, you can click on that to restore the window to it's normal size.



Move Option

This option is not available when the program has been maximized (fills the entire screen). To access this option, click on the system menu in the upper left corner of the LottoMan window or press Alt-Spacebar. Windows will display a cross symbol indicating you can move the window. Then use the arrow keys to move the frame left, right, up or down. When you have the window located where you want it press Enter. Otherwise, press Escape (Esc) and Windows will leave the window where it was. This movement option can also be used with the LottoMan icon if the program has been minimized.

As an alternative to using the system menu to move the program window, you can move the mouse pointer to the caption bar (top of the program's window where the program name appears) and press and hold the left mouse button. While holding the button down, move the mouse around and the window will follow it. When the window is positioned where you want it, release the button. You can also use the mouse to move the icon when the program window is minimized by clicking on the icon and holding the button down then moving the mouse.

Size Option

This option is not available when the LottoMan window has been maximized or minimized. To access the size option, click on the system menu in the top left corner of the LottoMan window and click on size or press Alt-Spacebar and S. This option allows you to change the height or width of the LottoMan window. After selecting the size option Windows displays a cross to indicate you are going to change the size of the window. Press the arrow that points to the edge of the window you want to move (i.e. to move the left edge of the window in or out, press the left arrow). The cross symbol will vanish. You may now use the left and right arrow keys to move the edge left and right (you would use the up and down arrow keys to move the top or bottom edge of the window). When you are satisfied with the new position of the edge, press Enter. Otherwise, press Escape and Windows will leave the size unchanged.

As an alternative to using the size option, you can move the mouse pointer to the edge you want to move and it will turn into a double ended arrow (either points on the left and right or top and bottom) to indicate you can change the size. Press and hold the left mouse button and move the mouse left and right or up and down to drag the edge of the window along with it. When you are happy with the new location, release the button. You can also use the corners of the window which will make the cursor turn into a diagonal double ended arrow. In this way pressing the mouse button and moving the mouse will move both adjacent edges (i.e. dragging the bottom left corner down and left will make the left edge move out and the bottom edge move down).

Minimize Option

This option will remove the LottoMan window from your screen (so you can see the windows it was covering up, etc.) without exiting the program. When you select this option the icon shown below will appear at the bottom of your display screen. To return to LottoMan you can click on this icon and select restore or just double click on the icon. Note that while LottoMan is minimized it is still running, using memory, display resources and so on... it just isn't taking up space on your screen. To select this option, click on the system menu and click on Minimize or press Alt-Spacebar and press N. As an alternative to using the minimize option you can click on the down arrow that appears in the top right corner of the LottoMan window.



Maximize Option

This option expands the LottoMan window so that it fills your entire screen. This is the display mode for which LottoMan was designed and is the default view of the program window when you start LottoMan. To access this option click on the system menu (or the LottoMan icon if the program has been minimized) then click on the Maximize option or press Alt-Spacebar then X. As an alternative to using the maximize option, you can use the up arrow that appears in the top right corner of the LottoMan window. If there is no up arrow, rather a double arrow (up and down), the window has already been maximized.

Close Option

This option presents yet another way of exiting the LottoMan program. You can access this option by clicking on the system menu in the top left corner of the LottoMan window then clicking on close, pressing Alt-Spacebar then Close or pressing Alt-F4. The following list summarizes the myriad means of exiting the program...

Mouse

- Click on the system menu then click close
- Click on the File option in the main menu then click exit.
- Double click on the system menu in the top left corner of the LottoMan program window

Keyboard

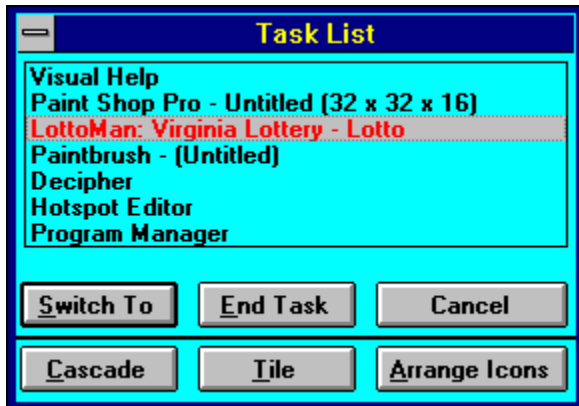
- Press Alt-Spacebar then press C
- Press Alt-F then X
- Press Alt-F4

Windows

- Double click in a blank area on your screen, select LottoMan from the list and click on End Task.
- Click on the system menu in any program and select the Switch To option. Select LottoMan from the list and click on End Task.
- Exit Windows

Switch To Option

The switch to option displays a window similar to the one shown below. This window provides access to all of the programs you currently have running. Use the up and down arrow keys or the mouse to select a program from the list and then select one of the options buttons to act on that program. The list below describes what each of the buttons does.



- Switch To

This option will make the highlighted program come to the top of the windows on the screen and become the "active" program (i.e. the program you are currently working with). As an alternative to using the switch to task list to change programs, you can use Alt-Tab or Alt-Esc to change active programs.

- End Task

This option will cause the highlighted program to exit just as though you had selected Close from its system menu or Exit from its file menu.

- Cancel

Closes the Task List window without doing anything and returns to the last program you were working with.

- Cascade

This option arranges all of the open windows on your desktop in an overlapped manner from the top left corner of your display down toward the lower right corner. This allows you to see every window on the desktop.

- Tile

This option is similar to the cascade option except that it arranges and sizes the windows so that they are all visible without overlapping each other.

- Arrange Icons

This option moves all of the icons, at the bottom of the display, for your minimized programs so that they fill the screen from left to right and bottom to top. This gets rid of any "holes" between icons and helps find icons that might be hiding under another program's open window.

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- 3 INTELLECTUAL PROPERTY RIGHTS:** Upon completion of the thirty (30) day evaluation period, all information including, but not limited to, ranks, confidence indexes, suggested picks and plays, user picks and user plays, generated by the Shareware evaluation version of LottoMan or through the use of the Shareware evaluation version of LottoMan after the expiration of the evaluation period shall be the sole intellectual property of Lighthouse Engineering. Lighthouse Engineering claims and retains all rights to all such information and your use of this information is expressly prohibited. This paragraph shall become null and void upon receipt of payment to Lighthouse Engineering for registration of this Shareware evaluation version of LottoMan provided such payment precedes your use of the information.
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- 9 **GOVERNING LAW:** This agreement is governed by the laws of the Commonwealth of Virginia. Should any part or parts of this agreement be deemed unlawful they shall be stricken in part, the remainder of this agreement shall continue to apply in full force.

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To register your copy of LottoMan, you must first mail in your order form along with a check for the correct amount in US Dollars or register online via [COMpuServe](#). Upon receipt of your [registration](#) form, Lighthouse Engineering will issue you a personalized Serial Number and a Password Key. This unique pair of codes will permit you to convert any version of LottoMan from the shareware version to the registered version. Be sure to keep your codes in a safe and secure place. Your code is unique and you are considered responsible for its security. Do not permit any activated copy of LottoMan to be circulated via BBS or other means.

You may request your codes by E-Mail if you've mailed in your entry. To do so, E-Mail via CompuServe to Scott Piel at 74151,1035, via [Prodigy](#) to KAYX45A, via AOL to LHouseEng or [Internet](#) to 74151.1035@compuserve.com - upon receipt of your registration form, we will respond to your E-Mail with your [activation codes](#).

After receiving your codes or downloading an upgrade to the program, you can activate your copy by clicking on the "Register Your Copy" button in the [Help/About](#) menu or displayed when the program first starts. When the Registration Form [dialog](#) appears, enter your full name and address in the space provided along with your serial number and password on the last two lines. [Click](#) OK when you are done entering the information.

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Please, remember, you paid for your copy. Don't give it away to others. Make sure any copies you give out are not activated and protect your serial number and password. As always, I sincerely thank you for your support of LottoMan.

Communicating With Us

Lighthouse Engineering is committed to first rate customer support. We view each of our users as part of our family. You are very much encouraged to stay in touch with us! We love to hear from users who are winning and who have developed playing systems that work for them. If you are winning or have a system you would like to share with us, PLEASE drop us a note and let us know.

If you get stumped somewhere along the way... feel free to call for help. However, please do take the time to browse the help system for an answer.

If you are experiencing a problem with the program or a program error, please be sure to write down all messages displayed and the exact sequence of steps required to reproduce the error. If we can, we will correct the problem over the phone... otherwise we do promise as quick a solution as possible.

We always welcome comments on anything you feel is a shortcoming of the program and/or documentation or an area that can be improved. Further, your suggestions for additions are not only welcomed, but encouraged. Nothing is more important to us than your satisfaction in both the quality of our programs and our service. Without you, we wouldn't be here.

Contact methods

Your best bet is to contact us via [CompuServe](#). This is the least expensive option and turn-around should be quick as most days we check messages more than once. This also permits for an ongoing discussion. To reach us via CompuServe, address your message to

K. Scott Piel, CIS ID 74151,1035.

You can also direct mail to the CompuServe account via the [Internet](#) by writing

74151.1035@compuserve.com

You'll usually find me wandering about in GO BCPPWIN or GO WINSHARE, you can, of course, send it by E-Mail, but the WINSHARE forum is free.

As an electronic alternative to CompuServe, you can also contact us via [Prodigy](#) E-Mail or JUMP HOBBIES BB and write into the LOTTERY subject. Our address on [Prodigy](#) is

KAYX45A

The final electronic option is provided via [America Online](#). Again, you can write to us using E-Mail or Go To keyword Exchange and open the Hobbies/Leisure folder, there is a lottery players topic available within that folder. Lighthouse Engineering also maintains a dedicated support folder for [LottoMan](#) on AOL. To find this folder, use the Go To keyword [Windows](#) and [click](#) on the Windows Forum button. From there, click on the Message Board button and then on the List Categories button. Scan down through the list of categories and locate the shareware support folder. [Double click](#) on that and scan through the list of support topics for the [LottoMan](#)-Lottery Manager folder. Our AOL page name is

LHouseEng

By snail-mail, write to the address below

Lighthouse Engineering
5055 Pleasant Valley Rd
Virginia Beach, Va. 23464-6005
(USA).

Attn: LottoMan

And, of course, you are welcome to call at the number below from 9am to 5pm, eastern time, Monday through Friday. We can also receive faxes on that line if you call in advance and let us set up. When calling, please be at your computer and ready with all information.

(804) 467-4167

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These three buttons, Yes, No and Cancel are the actions you may take in response to the message above. Read the message carefully and choose the action you wish to take. To execute the action you have chosen, click on the corresponding button or press Tab until the correct button is selected and press Enter.

Any Data Option

This option controls how each test is evaluated for the number of suggested picks that matched the winning picks and the confidence indexes that were "assigned" to the winning picks. This option is used only to control the display of the results of the self test and need not be set before running the self test.

The limits table (directly above the ordering options) displays the number plays which matched each possible number of picks (i.e. in a game that uses six picks, the table will display how many times the list of suggested picks matched one winning pick, two winning picks, three winning picks, and so on, up to six winning picks). A winning pick is considered to have been matched if it was assigned a confidence index between the upper limit and lower limit in any list of suggested picks. Therefore, more than one winning pick for a given play might have come from the same list of suggested picks. This view of matching winning picks is equivalent to using the All Ways option in the number wheel.

When this option is set, the confidence index graph at the top of the self test window displays the number of winning picks that came from each list of suggested picks for pick one, pick two, etc. This is determined by finding the suggested pick list that assigned the highest confidence index to each winning pick. Once the highest CI is found, the number of times that CI was "hit" is incremented by one for the pick that had offered that CI.

Unlike the By Pick or Any Pick options, the actual number of tests will vary from one pick to the next depending entirely on how many times the pick had offered the best confidence index for winning picks. This can be useful in determining which picks tend to produce the most winning suggestions with the higher confidence indexes.

The numbers in this column show the average number of draws between appearances for each value and there is no relationship between the average age for one value and another value. When scanning the database, the program keeps track of the number of draws between each appearance of a given value, totals those ages and divides by the number of times the value has appeared. Values with a low average age appear more often than those with a high average age. When sorting by average age, those values with low average ages will appear at the top of the list and those with the longest period between draws at the bottom of the list.

This option sorts the table listing in order of shortest average age between draws to highest average age between draws. Thus, those numbers listed at the top of the table appear most frequently on average. In order to change the sort order being displayed, you must click the Go button after selecting the desired sort order.

This column displays the average frequency for the current value which is arrived at by adding the frequencies of all the values and dividing by the number of values in the table. The average frequency for all values will always be the same. Values with a current frequency above the average appear more than "normal" for this game while those with lower current frequency are colder values.

Some lotteries permit the player to use bonus digits. Use this option to specify how many bonus digits are allowed. To select this field, press Alt-B, press Tab until the field is selected or click anywhere in the box to the right of the label. To change the value of the number of bonus digits, click on the arrows to the right of the number or use the up and down arrow keys on your keyboard. The default number of bonus digits is 0.

Clicking the Cancel button will abort the editing and return you to the program without compiling the wheel instructions of saving any changes to disk. You will not receive a warning after clicking Cancel and all changes you may have made will be lost.

Clicking on Cancel will close the wheel list and return you to either the number wheel or menu system without continuing the current operation.

The Confidence Index Graph

The confidence index graph appears at the top of the self test window and displays the number of times each confidence index was assigned to the winning pick for each pick and each combination of calculation methods using each of the ordering options. If that sounds like a mouthful, it's because it is. However, using the graph is much easier than generating it was.

The bottom of the graph is numbered from 0 to 100 from left to right. These values correspond to the actual confidence indexes that might be assigned to a winning pick. The left edge of the graph is numbered from zero to some value greater than zero from bottom to top. The maximum number will depend on the maximum value inside the graph and will vary from one pick to the next, one option to the next and so on. The line graph inside the chart indicates how many times each winning pick was assigned each confidence index for the numerical analysis performed for the currently selected pick and calculation method. Interpretation of the graph will depend upon the ordering option you have selected. Thus, if select pick one and the aging, delta and frequency, the graph will display the number of times each confidence index was hit by winning picks in pick one using those calculation methods.

If the By Pick option is selected, the self test will determine what confidence index was assigned to the first winning pick by the analysis for the first pick, and so on for each possible pick. It then increments the number of times that index was used or "hit" for that pick. When the graph is drawn the self test will place a point over each confidence index (from left to right) that appears at the same "height" on the graph as the number of times that confidence index was used. It then draws a line from each point to the next. Thus, the graph displays an analysis of what confidence indexes the winning picks tend to cluster about when keeping them in the same order in which they were drawn or appeared after sorting.

If the Any Pick option is used, the self test first finds the combination of winning picks which produces the most number of matched picks (i.e. is the winning play is 1-2-3, the self test will tests the combinations 1-2-3, 1-3-2, 2-1-3, 2-3-1, 3-1-2 and 3-2-1 in order to find which combination matches the most number of suggested picks). Once the self test has found the best combination, it then determines the confidence index given by each pick for the winning pick that was assigned to it by the re-ordering and increments the count of times that index was used by that pick. Thus, the resulting graph is showing what confidence indexes for each pick produce the most number of winning picks if order doesn't matter. NOTE: Changing the upper and lower limit for each pick and running the self test again will produce a different result. Therefore, the analysis depends (almost entirely) upon the limits you provide and changing the limits without rerunning the self test (using this option) will result in an analysis which is not accurate.

If the Any Data option is selected, the self test will find the pick that offers the highest confidence index for each winning pick and then increment the number of times that maximum confidence index was used in the graph for the pick that provided that maximum index. Therefore, the actual total number of times confidence indexes were "used" by each pick will vary from one pick to the next depending on which picks provided the most "maximum" confidence indexes for winning picks and the resulting graphs will tend to cluster toward the higher confidence indexes.

You can print this graph at any time by clicking on the right mouse button while the mouse pointer is over the graph. Select the printer you want to send the graph to and, optionally, use the Setup button to change the orientation to Landscape from Portrait. When you are ready to start printing, click on OK.

Close Button

When you are through with the self test and want to return to the main data view, click on the close button and the self test window will be removed and you can go on to run the number wheel, edit the history, or whatever. You can click on Close while the self test is running; this will stop the self test and exit in a single operation. In other words, you do not first have to click on Stop in order to close the self test.

Note that when you close the self test, the upper and lower limits you have selected are *not* copied into the main data view. If you want to use the set of limits you have selected in the self test, you will need to copy them down, close the self test then set them as the new limits in the main data view.

When you are done viewing the current table, click the Close button. The program will close the current table and delete the scratch file from your hard disk. If, for some reason, the program can not delete the file, it is named LOTTOMAN.TBL and can be deleted manually without hurting the program.

Close Button

When you are through with the vector analysis and want to return to the main data view, click on the close button and the analysis window will be removed and you can go on to run the number wheel, edit the history, or whatever. You can click on Close while the analysis is running; this will stop the tests and exit in a single operation. In other words, you do not first have to click on Stop in order to close the vector analysis window.

When you select this option, the program will automatically select the Random Plays target combination method. This option treats the numbers you select for each pick as belonging to individual pools of numbers to be wheeled. In other words, the numbers you select for each pick belong to a pool unique to that pick. When you click Go, the program will draw one number from the pool for each pick to build a play. It will never draw two numbers from the same pool. If you are generating plays for a game which does not repeat numbers, such as the pick 6 lotto, the program will never generate a play that repeats the same number. Thus, you can select the same number into the pools for two different picks and generate plays without fear of creating an invalid play. If you are generating plays for an ordered game, such as the daily pick 3, the number drawn from each pool for it's respective pick will never appear in a different pick unless it has also been selected into that pick's pool.

When you select this option, the program will automatically select the Guaranty Matches target combination method. This option treats all of your number selections as belonging to a single pool. It combines all of the selections into a single active list of numbers to be wheeled. When you click go the plays will be generated by drawing one number from this pool for each pick. If a number appears in the selection list for more than one pick, it will still be treated as a single selection. This option is not available for games that use repeating numbers (such as the daily pick 3).

Clicking the OK button causes LottoMan to compile the instructions for the wheel, as you've written them, and save the compiled results to your hard disk. If you are only viewing a wheel, the OK button will close the view window and return you to the program.

If any errors are encountered during the compile, you will receive a message describing the error, the compile will be aborted and you'll be returned to the editor so that you can correct the errors.

This column displays the number of draws that have taken place since the last time each value appeared in the game. The lower this number, the more recently it was drawn, the higher the number, the longer it has been since the value appeared. When sorting by current age, the values which have appeared most recently will appear at the top of the list and the oldest values at the bottom of the list.

This option sorts the table listing in order of lowest current age to highest current age. Thus, those numbers listed at the top of the table are the most recently drawn values. In order to change the sort order being displayed, you must click the Go button after selecting the desired sort order.

The numbers in this column show how many times each value has appeared in the current game. The higher the frequency, the more common the value. When sorting by current frequency, those values with the highest current frequencies will appear at the top of the listing and those with the lowest frequencies at the bottom of the list.

This option sorts the table listing in order of highest current frequency to lowest current frequency. Thus, those numbers listed at the top of the table are the most common values. In order to change the sort order being displayed, you must click the Go button after selecting the desired sort order.

This heading indicates the month and year for the dates currently being displayed in the calendar. To change the current month and/or year, click on the << and >> to scroll through the calendar.

You can delete all of the plays left in the list without verifying each, at any time, by clicking on the All button or pressing Tab until the All button is selected and pressing Enter. Once you click all, all plays not yet verified will be deleted without further comment to you. These plays can not be undeleted, once you click All, except by closing the file without saving it.

You can quit the deletion process at any time by clicking on the Cancel button, pressing Tab until the Cancel button is selected and pressing Enter or by pressing Escape (Esc on your keyboard). Any plays which you have not already verified to be deleted will be returned to the play list and the delete operation terminated.

If you do not want to delete the play that is being displayed, click on the No button or press Tab until the No button is selected and press Enter. After clicking on No, the current play will be returned to the list of plays.

If the play being displayed is, in fact, the one you want to delete and you want to delete only this play, click on the Yes button or press Tab until the Yes button is selected and press Enter. Once you click Yes you can not undo the deletion except to close the file without saving it.

The directory tree shows the currently open (selected) directory and all other directories on the current disk drive. The current path, including drive, is listed above the tree and the open directory appears as an open file folder in the tree. To pick any one of the other directories, double click on the directory or use the up and down arrow keys to highlight the correct directory and press Enter.

These button can be used to directly enter a date into the date field. Those days of the month which fall under a red weekday heading are valid play dates. If you move the point of the arrow over one of these dates it will change into a crosshair. Click on the button and the complete date will be inserted into the date field. If the mouse pointer is not a crosshair, the date can not be used for this game.

These headings indicate both the day of the week and the days on which the lottery is drawn. Those dates below weekdays which appear in red are valid draw dates. Those which fall below the black weekdays are invalid.

This field is made up of seven push-buttons which select which days of the week the lottery is drawn on. To specify the lottery is drawn on a given day of the week, the button should be down. If it is up, this means the lottery is not drawn on that day. To change one of the buttons, click on the button or press the Alt key along with the underlined letter for that day - i.e. to change Monday press Alt-M. The default setting for the drawing days is all seven days. At least one day must be selected.

The drawing method options describe how the lottery uses the numbers. Lotteries such as Pick 3 repeat the same set of numbers for each pick - i.e. all three picks could be the same number. Other lotteries, such as Lotto, only allow a number to be drawn once per play - i.e. only one pick can use the number 6, the remaining picks must come from the remaining numbers. To set the correct drawing method, press Alt-O or Alt-R, press Tab until the correct method is selected then press the spacebar, or click on the correct method. The default setting is to repeat digits for each pick.

The disk drive combo box is used to select the current drive. To change drives, click on the down arrow symbol and then the correct drive, or, use the up and down arrow keys to select the correct drive and press Enter.

Should you choose to quit adding plays to the list or return a play you are editing, unchanged, to the list, click on Cancel, press Escape (Esc on your keyboard) or press Tab until the Cancel button is selected and press Enter. Once you click Cancel, the play that is currently in the edit dialog will be discarded if you are adding plays or returned to the list unchanged if you are editing. If there are more plays to be edited in the current list, the next one will be brought into the edit dialog. If you are adding plays or there are no more plays to be edited, the program will return to the main data view.

Once you are satisfied that the contents of the date and pick fields are correct, click on OK, press Enter or press Tab until the OK button is selected and press Enter. If the play being entered is a new play, the program will locate its correct position in the current play list and insert it according to an ascending date sort. If the play is an existing one that you are entering, the program will remove it from the play list and locate it's new position according to date if it has changed. The play will then be inserted in the new position. In either case, any changes you made in the pick data will be made as well. If you are editing plays and there are more plays in the list, the next one will be brought into the dialog for you to edit. If you are editing plays and there are no more plays to edit, the program will return to the main data view. If you are inserting plays, a new dialog will appear for you to enter the next play into.

When this option is selected, the Number Wheel will permit you to select a custom wheel, from the program's database of wheels, after you click the Go button. Some advanced knowledge of the custom wheel you are going to use is required since you'll need to know how many numbers to select into the pool and in which picks these selections should be placed.

After you click Go, the program will display a list of custom wheels that generate the correct number of picks for the current game. Select the wheel you want to use from that list and click OK. The program will then display a short description of the wheel you chose including how many numbers you need to select to use the wheel, which picks they must be selected into and how many tickets and guaranteed winning numbers the wheel produces. If you click Cancel anywhere along the way, you'll be returned to the Number Wheel without having generated any plays.

If you click OK after viewing the wheel's description, the program will go on to generate the plays defined by the wheel. If you have not correctly pooled your number, the program will tell you where you have made mistakes and return you to the Number Wheel.

This list displays all of the files that match the contents of the file name edit box above. To change the contents of the list, enter a partial file name with wild cards (i.e. *.lmd) and click OK. To select a file from the list, click on the file then click OK, or double click the file which performs both operations. From the keyboard, you can press Tab until this list is active, then use the up and down arrow keys to select the file you want, press spacebar to select it and then press Enter.

Use this box to enter the file name, drive and directory you want to use. The default extension for LottoMan data files is .LMD and the drive and directory is optional. Alternatively, you can use the file list, directory tree and drive selector to choose a file. You can also use this field to control the list of files below it by entering a partial file name with wild cards (such as *.lmd) and clicking on OK to list all files that match that partial name.

Click on the Cancel button or press Escape (Esc on your keyboard) to quit the file open and return to the program without changing the current file or game.

Click on the OK button or press Enter to accept the current drive, directory and filename specified. If the filename includes a wild card, all files matching the file will be listed in the file list, otherwise, the program will attempt to use the file specified.

Click on the Cancel button or press Escape (Esc on your keyboard) to quit the file save and return to the program without writing to disk.

Click on the OK button or press Enter to accept the current drive, directory and filename specified. If the filename includes a wild card, all files matching the file will be listed in the file list, otherwise, the program will attempt to use the file specified.

The file type combo box lists all of the file types that are available for the current operation by name. The portion inside the parenthesis is the file extension used for that file type. To change files types, click on the down arrow symbol, then click on the file type you want, or, use the up and down arrow keys to select the file type. The new file type will appear in the file name edit above. Click OK or press Enter and a list of all matching files will be displayed.

Clicking on the Cancel button will close the filter settings dialog without applying the filter rules to any of the user plays in your database.

The value in this field indicates the play date you want to apply the filter to. By default it will be set to the last play date in your list of user plays. The date is in the form MM/DD/YYYY - a two digit month followed by a slash and a two digit day, another slash and a four digit year. When you execute the filter, it will only delete plays for the specified date which do not conform to the rules you have specified. If there are no user plays on the date you specify, the filter will do nothing.

Clicking the OK button will cause the program to apply the filtering rules you have specified to all user plays for the same date as indicated. The program will not display any messages until the filtering process has been completed. When the filtering is complete, a message will indicate how many plays were deleted by the filter and the filter settings dialog will be closed. You can not stop the filtering process once you click OK, nor can you recover (undelete) any user plays that have been deleted by the filter.

Use this field to specify the first number used in the lottery. For example, Pick 3 uses the numbers 0 through 9 for each pick (digit), so the first number would be 0. Lotto uses the numbers 1 through 44 and its first number would be 1. It is an error for the first number to be larger than the last number. To select this field, press Alt-I, press Tab until the field is selected or click anywhere in the box to the right of the label. To change the value of the first number, click on the arrows to the right of the number or use the up and down arrow keys on your keyboard. The default value is 0 and any number between 0 and 99 may be used.

This area displays the name of the current game, the number of picks that make up a play, the first and last number for the lottery, how many bonus picks are used (if any) and how numbers are used. The last section displays the days of the week on which the lottery is drawn. Once these settings have been made in the creation of a new game, they can not be altered, therefore the information you see is for display only and can not be altered. For more information on making these settings, see the Game/New topic.

The game list shows all of the games that are defined in the current LottoMan database file. To select a game from the list, click anywhere in the list or press Tab until the list is activated. Use the up and down arrow keys to highlight the game you want to use or click on the game. You can double click on the game you want which will both select the game and close the dialog in a single step.

To return to the program without making a new game, click on the Cancel button or press Tab until the Cancel button is selected and press Enter.

To create a new game with the options you have selected, click on OK or press Tab until the OK button is selected then press Enter. The program will make sure that you have entered a name for the game, selected beginning and ending values for your numbers and at least one day a week on which the lottery is drawn before it will permit you to continue.

NOTE: once you press Enter or click OK, you can not go back and make changes. Be sure your settings are correct.

The game title is the name of the currently loaded and active game. You define this title when you add a game to the lottery file. If no game is currently loaded, the message <No Game> is displayed.

Go Button/Stop Button

When you first open the self test, this button appears as a traffic light with the green bulb "lit". Once you have set the upper and lower limits you want to use, the number of data points, and are ready to start the self test, click on the Go button. Once you click the button, it will turn into a Stop button (red light "lit"). You can cancel the self test at any time by clicking the stop button. This will stop the analysis without leaving the self test. You can view the results in the confidence index graph and limits table, set new limits, data points, etc. and restart the test if you like.

To bring up this help screen, click on the help button or press Tab until the help button is selected and press Enter.

Register LottoMan Option

This option displays the information contained in this help file on how to register your copy of LottoMan. Please understand that this is a Shareware program. That means that you are allowed to try the program out and see if you like it before you buy it. It does not mean the program is free. If you like LottoMan and you intend to keep using it, you must register your copy. Failure to do so is a violation of the licensing agreement provided with this program and of the copyright which applies to it. No to mention that I have worked very hard to bring you this program. I'm quite sure you would shoplift or break your promise to a lawyer or doctor to pay for the services they provided you. Please show the same consideration to we poor programmers... hard as it may be to believe we eat too not to mention that moon pies and jolt cola are expensive. To access this option click on the Help option in the main menu then click on Register LottoMan or press Alt-H then R. You can also access this option by clicking on the Register button in the startup window and About window.

Checking this option will cause the filter to delete any play that has previously been drawn more times than indicated by the spin dial to the right. The filter will scan the entire history of the game looking for plays made up of the same numbers in the same order and keep a count of how many times they appear. This can make the filter process a little slow. Thus, if you set the spin value to 1 and check this option, any play which has never been drawn two or more times in the past will be deleted.

Checking this option will cause the filter to delete any play that has more odd numbers in it than indicated by the spin dial to the right. Odd numbers are 1, 3, 5, 7, 9, 11, etc. Thus, if you set the spin value to 4 and check this option, any play which has five or more odd numbers will be deleted.

Checking this option will cause the filter to delete any play that repeats the same ones digit more times than indicated by the spin dial to the right. The ones digit would be the 2 in 32, the 9 in 19, the 5 in 45 or just 4 in the number 4. Thus, if you set the spin value to 1 and check this option, any play which uses any ones digit more than once will be deleted.

Checking this option will cause the filter to delete any play that has a sum greater than indicated by the spin dial to the right. The sum is arrived at by adding together the individual numbers that make up the play. Thus, if you set the spin value to 170 and check this option, any play which has total value above 170 will be deleted.

Checking this option will cause the filter to delete any play that repeats the same multiple of ten more times than indicated by the spin dial to the right. The multiples of ten would be the 3 in 32, the 1 in 19, the 4 in 45 or just 0 in the number 4. Thus, if you set the spin value to 2 and check this option, any play which uses any multiple of ten more than twice will be deleted.

In the event that there are more values along the top edge of the history table than can be displayed at one time, you may use this scroll bar to move left and right through the list of values. Clicking the arrows at the left or right end of the scrollbar will move the table left or right one column, clicking on the center button and moving it left or right while holding the left mouse button down will pan through the list of values. Clicking between the center button and the left or right buttons will scroll left or right one screen-full of data at a time. You can also use the keyboard to move through the list. use the left and right arrow keys to move one line at a time, ctrl-left or ctrl-right to move one screen at a time, home or end to move to the left or right end of the list.

Use this field to specify the last number used in the lottery. For example, Pick 3 uses the numbers 0 through 9 for each pick (digit), so the last number would be 9. Lotto uses the numbers 1 through 44 and its last number would be 44. It is an error for the last number to be smaller than the first number. To select this field, press Alt-A, press Tab until the field is selected or click anywhere in the box to the right of the label. To change the value of the last number, click on the arrows to the right of the number or use the up and down arrow keys on your keyboard. The default value for this field is 9 and any value between 0 and 99 can be used.

Limit Controls

There are two limit controls provided for each pick which correspond to the same control limits in the main data view: an upper limit and a lower limit. The upper limit specifies the maximum confidence index to accept as a "hit" or, in other words, for LottoMan to suggest a number as a good play, the confidence index for the number must be less than or equal to upper limit you specify. In a similar manner, the lower limit specifies the minimum confidence index to be used for suggested picks. To change a limit click on it and use the keyboard to raise or lower the value displayed.

You should set the limits before you start the self test. The values displayed in the limit table for the number of plays matching a certain number of suggested picks depends on these settings and can not be altered without re-running the self test with a different set of values for the limits.

You can, however, alter the limits for viewing the confidence index graph (at the top of the window) after the self test has run if you are using the By Pick ordering option or the Any Data ordering option. In both cases, the altered limits will alter the number of "hits" and the percent "hit" in the analysis section of the CI graph. While the limits can be changed for the Any Pick ordering option, the resulting analysis is not very meaningful. To alter the limits for a completed self test, change the limit values for the pick you want to view then click on the pick option itself.

The Limit Table - Performance Analysis

The limit table appears as a chart (much like a spreadsheet) in the center of the self test window and provides an analysis of how well you would have done had you bet all of the suggested picks (depending on the ordering option selected), or how well you might have done if you didn't bet all of the picks but used only those numbers that LottoMan had suggested you play.

Across the top of the table are labels for each possible combination of calculation methods; A is aging, D is delta, F is frequency and T is trend, thus ADF is combining aging, delta and frequency in the analysis. Along the left edge of the table, from top to bottom, is the number of picks that may be matched. In a game such as Lotto which uses six picks per play, there will be rows for matching 6, 5, 4, 3, 2, 1 or 0 picks from top to bottom. Inside the table is a count of how many times a given number of winning picks had appeared in the list of suggested picks. Interpretation of these results depends on which ordering option you are using.

When using the By Pick option, the number of matching picks depends on the winning pick having been assigned a confidence index between the upper limit and lower limit you defined for the same pick (i.e. for the first winning pick to have been matched, the confidence index assigned to it by pick one's analysis must have been between the upper limit and lower limit for pick one). This analysis indicates how often you would have gotten the winning picks in the right order had you only picked one from each list of suggested picks.

When using the Any Pick option, the number of matching picks depends on the winning picks having been assigned confidence indexes which fell between the upper limit and lower limit for one of the pick's analysis. Which pick a given winning pick came from is not considered important, the only requirement is that no two winning picks were drawn from the same list of suggested picks. This analysis indicates how many times you would have matched a certain number of picks had you only selected one pick from each list of suggested picks, however, the matches might not have been in the same order in which the winning picks were drawn or appeared after sorting.

When using the Any Data option, the number of matching picks depends only upon the winning pick having fallen between the upper limit and lower limit for one of the list of suggested picks. In this case more than one winning pick might have come from the same list of suggested picks. This analysis indicates how many of the winning picks were provided as suggested picks without regard to the order in which they were suggested or which pick suggested them. In other words, how often you would have matched a given number of picks had you selected all of your numbers from the combined list of suggested picks. This information is most useful for games like Lotto which are not order dependent. If the lottery jackpot got very large and you were willing to make a very large bet, this analysis indicates your odds of winning the jackpot if you played every combination of the suggested picks. For what it is worth, if you used the default limits sent with the Virginia Lotto database the number of combinations is typically in the order of 780,000 and the odds matching all six picks in that set of suggested picks is roughly 50%, the odds of matching five or more are in excess of 80%, the odds of four or more are in excess of 90%... these are all cash winning tickets. For a \$20 million pot, I would be real tempted to make that bet if I had the money to burn. The odds of losing the entire bet are only 1 in 10 while the odds of winning are 1 in 2. Not bad odds if you're rich.

This information is mandatory, you must enter a name for the lottery. You should choose a name that you are not already using and that is descriptive. To select this field, click anywhere inside the box, press Alt-L or press Tab until the field is selected. There is no default value for this field.

Checking this option will cause the filter to delete any play that has previously been drawn fewer times than indicated by the spin dial to the right. The filter will scan the entire history of the game looking for plays made up of the same numbers in the same order and keep a count of how many times they appear. This can make the filter process a little slow. Thus, if you set the spin value to 1 and check this option, any play which has never been drawn before will be deleted.

Checking this option will cause the filter to delete any play that has fewer odd numbers in it than indicated by the spin dial to the right. Odd numbers are 1, 3, 5, 7, 9, 11, etc. Thus, if you set the spin value to 2 and check this option, any play which has only one odd number or no odd numbers will be deleted.

Checking this option will cause the filter to delete any play that does not repeat the same ones digit at least as many times as indicated by the spin dial to the right. This view is a little different than you might think. The value in the spin indicates you require at least one of the ones digits to be used no more times than indicated. The ones digit would be the 2 in 32, the 9 in 19, the 5 in 45 or just 4 in the number 4. Thus, if you set the spin value to 1 and check this option, any play which does not contain at least one case of a ones digit that is not repeated will be deleted. In other words, if the play were made up of nothing but pairs of ones digits, it would be deleted. Thus the play 1-23-11-24-34-43 would be deleted since it is made up of three pairs of ones digits: 1-11, 23-43 and 24-34. No ones digit is not repeated. On the other hand, the play 13-24-26-34-44-46 would not be deleted since the number 3 (in 13) is only used once.

Checking this option will cause the filter to delete any play that has a sum less than indicated by the spin dial to the right. The sum is arrived at by adding together the individual numbers that make up the play. Thus, if you set the spin value to 94 and check this option, any play which has total value below 94 will be deleted.

Checking this option will cause the filter to delete any play that does not repeat the same multiple of ten at least as many times as indicated by the spin dial to the right. This view is a little different than you might think. The value in the spin indicates you require at least one of the multiples of ten to be used no more times than indicated. The multiples of ten would be the 3 in 32, the 1 in 19, the 4 in 45 or just 0 in the number 4. Thus, if you set the spin value to 1 and check this option, any play which does not contain at least one case of a multiple of ten that is not repeated will be deleted. In other words, if the play were made up of nothing but pairs of multiples of tens, it would be deleted. Thus the play 1-9-21-24-32-33 would be deleted since it is made up of three pairs of multiples of tens: 1-9, 21-24 and 32-33. No multiple of ten is not repeated. On the other hand, the play 13-24-26-41-44-46 would not be deleted since there is only one number between 10 and 19 (the 13). That multiple of ten is only used once.

The numbers in this column display the median numbers of draws between appearances for each value and should not be confused with the average age. When the program scans the database, it keeps track of the numbers of draws between each appearance of each value. The median age is the one where exactly half of the appearances had a longer period than the median and half had a shorter period than the median. Note that there is no relationship between the median age of one value and another value. The lower the median age of a value, the more frequently it appears and the lower the median the more number of draws between appearances. When sorting by median age, those values with the shortest period will appear at the top of the list and those with the greatest number of draws between appearances at the bottom of the list.

This option sorts the table listing in order of shortest median age between draws to highest median age between draws. Thus, those numbers listed at the top of the table are those that appear most often. Note that this sort uses the median, which should not be confused with average. The median age is the age for which exactly half the ages are longer and half are shorter for the given number. In order to change the sort order being displayed, you must click the Go button after selecting the desired sort order.

This text is informing you what is happening and offering a list of the actions you can take. Read the message carefully and select the action that best suits the situation.

The minimize button is used to clear LottoMan from your screen without ending the program. When you click on minimize, the LottoMan icon will appear in the lower left corner of your screen. To reactivate the program you can double click on the icon, or use Alt-Tab to switch to LottoMan.

Clicking on this button will cause the calendar to display the dates for next month. If the current month is December, the calendar will also reflect the next year.

The digits option is used to specify the number of picks in a single play (or draw) for the lottery. Games such as Pick 3 use three digits while games such as Lotto use 6. To select this field, press Alt-D, press Tab until the field is selected or click anywhere in the box to the right of the label. To change the value of the number of digits, click on the arrows to the right of the number or use the up and down arrow keys on your keyboard. The default number of picks is 3.

This option presents the values in the table in numerical order. That is, from the lowest value to highest, regardless of the value's ages or frequency. This is the default sort order displayed when you first select a table option from the program's menu. In order to return to the numerical order, after doing a statistical sort, click on this option and then click the Go button.

When you are done viewing the window, click on OK or press Enter.

Any Pick Option

This option controls how each test is evaluated for the number of suggested picks that matched the winning picks and the confidence indexes that were "assigned" to the winning picks. This option is used only to control the display of the results of the self test and need not be set before running the self test.

The limits table (directly above the ordering options) displays the number plays which matched each possible number of picks (i.e. in a game that uses six picks, the table will display how many times the list of suggested picks matched one winning pick, two winning picks, three winning picks, and so on, up to six winning picks). Determining how many picks were matched is a bit more complex using this option than using the Any Data or By Pick options. In this case, LottoMan will rearrange the order in which the winning picks appear into each possible combination and look for the arrangement that produces the most number of matching picks. A pick matches if, after reordering, the confidence index assigned to it falls between the upper limit and the lower limit for the pick in which it now appears. In other words, if we are using three picks per play and the winning play was 1-2-3, LottoMan will evaluate the play using the combinations 1-2-3, 1-3-2, 2-1-3, 2-3-1, 3-1-2 and 3-2-1 and find the combination that matches the most picks with confidence indexes between the control limits for their "new" position. This view of matching winning picks is equivalent to using the By Pick option in the number wheel and requiring only that no more than one winning pick be drawn from each list of suggested picks without regard to what order they are in.

When this option is set, the confidence index graph at the top of the self test window displays the number of winning picks that came from each list of suggested picks for pick one, pick two, etc. This is done by finding the confidence index that was assigned to each winning pick by the pick in which it appeared after reordering (explained above) in the analysis (i.e. the confidence index assigned by the first pick to the pick that was made the first pick in order to match the most number of picks in the analysis). Once the assigned CI is found, the number of times that CI was "hit" is incremented by one for the pick that had offered that CI.

In this case the number of test points for each pick will always be the same and the analysis is useful in determining how often LottoMan has offered the winning picks as suggested picks in any order while never suggesting more than one winning pick in each list of suggested picks. In other words, how often does LottoMan suggest all of the picks as individual suggestions but got them in the "wrong" order.

By Pick Option

This option controls how each test is evaluated for the number of suggested picks that matched the winning picks and the confidence indexes that were "assigned" to the winning picks. This option is used only to control the display of the results of the self test and need not be set before running the self test.

The limits table (directly above the ordering options) displays the number plays which matched each possible number of picks (i.e. in a game that uses six picks, the table will display how many times the list of suggested picks matched one winning pick, two winning picks, three winning picks, and so on, up to six winning picks). A winning pick is considered to have been matched if it was assigned a confidence index between the upper limit and lower limit for the same pick in the analysis (i.e. the confidence index assigned to the first winning pick by the analysis of pick 1 was between the upper and lower limit used with pick 1). This view of matching winning picks is equivalent to using the By Pick option in the number wheel and requiring that sorting the picks not change their order.

When this option is set, the confidence index graph at the top of the self test window displays the number of winning picks that came from each list of suggested picks for pick one, pick two, etc. This is done by finding the confidence index that was assigned to each winning pick by the same pick in the analysis (i.e. the confidence index assigned to the first winning pick by the first pick in the analysis). Once the assigned CI is found, the number of times that CI was "hit" is incremented by one for the pick that had offered that CI.

In this case the number of test points for each pick will always be the same and the analysis is useful in determining how often LottoMan has offered the winning picks as suggested picks in the correct order (in the same order as they appeared as drawn for order games or in the same order as they appear after sorting for unordered games).

The pick edits are provided in order to enter the individual numbers drawn for the play you are entering or editing. If the lottery you are playing does not permit a number to be picked more than once per play, the program will sort them into ascending order for you... therefor, you do not have to do so yourself. If the lottery does repeat numbers for each pick, be sure that you enter them in the order in which they were drawn. It is an error for the value of a pick field to be empty or outside the range of valid numbers for this lottery. Fields that do not apply to this lottery are disabled and can not be edited.

To edit a field, click on the pick to edit, press Alt together with the underlined letter for that field or press Tab until the correct field is selected. Once you have the correct field, type in the correct number for that pick. Do not press Enter.

Pick Options

These buttons control which pick you are viewing in the confidence index graph at the top of the self test window. Graphical analysis is only available for one pick at a time and the currently visible pick is indicated by a small dot to the left of the name of the pick. To display a specific pick, just click on the pick option. You can, also, redraw the graph for the current pick by clicking on the pick again.

The pick you select combines with the upper limit and lower limit (to its right), the ordering option in the bottom center of the window and the calculation methods in the top right corner of the window to produce a graph of the confidence indexes which were given to the winning picks over the tested range of past winning plays. The pick options do not affect the limits table (directly above them) and are meaningless until you have run the self test by clicking the Go button. You can click on a pick option while the self test is running to see a graph of the results at the current point in the self test, otherwise the graph is not updated until the self test is completed.

Play Calendar

The play calendar shows the current month and year the first time you bring up the Edit Numbers dialog during a session with LottoMan. If you change that date, the calendar will show the new date the next time you bring up the dialog during the same session. The days of the week that appear in red are the only days on which the lottery is drawn. The calendar is provided as an easy means of finding the correct date for lottery drawings and for entering those dates into the play date field in the Edit Numbers dialog. You can get more detailed information about each part of the calendar by clicking on the area of interest in the copy below.

Getting dates from the calendar - by the numbers



<<	October '94						>>
S	M	T	W	T	F	S	
						1	
2	3	4	5	6	7	8	
9	10	11	12	13	14	15	
16	17	18	19	20	21	22	
23	24	25	26	27	28	29	
30	31						

- 1 Determine if the correct month and year is being shown in the calendar. If not, click on the << or >> buttons until the correct month appears.
- 2 Click on the button for the correct day of the month for the draw. The program will insert the complete month/day/year date into the date field.

NOTE: You can only select days that fall under a red weekday. If the day you want to select is valid, the mouse pointer will change from an arrow to a crosshair. Any other date is invalid and will generate an error message when you try to save the play to your file.

- 3 If the date entered into the field is not the one you intended, return to step 1.

NOTE: There are no means of using the play calendar from the keyboard or menu system. A pointing device (mouse, trackball, etc.) is mandatory for its use.

The Date field specifies the drawing date on which the play you are entering or editing was drawn if a winning play or the date on which you want to bet this play if entering or editing user plays. The date field is in the format of month/day/year and the full year should be entered in order to maintain proper sort orders. When adding new plays to the current list, the date field will, by default, contain the next draw date after the last one in the list of winning plays. It is an error to enter a date which does not fall on a valid drawing date. You can also use the play calendar to enter a date in this field.

To manually enter a date, click on the date edit box, press Alt-D or press Tab until the date field is selected. Type in the correct date in the mm/dd/yyyy format shown. Do not press Enter.

These fields display the drawing date and values for the individual picks for the play that is about to be deleted. You should use this information to verify that the play is, in fact, the one you intend to delete.

Click on this button and the calendar will change to reflect the dates for the month that precedes the current calendar month being displayed. If the current month is January, the calendar will also change to reflect the previous year.

If you would like to print this table, click on the Print button. The program will display the printer setup dialog from which you may select which printer you want to direct the output to and which pages you want to print. The program will print the current table using the current sort order. The page numbers are derived by determining how many lines will fit on a page and dividing the number of rows in the table by that value. The program will print as many historical values as will fit across the page starting with the first historical entry visible in the table. You can fit more history on a page by using the landscape mode, but it will require more pages to print the entire table.

Click on the print button to create a hardcopy of the current custom wheel. After clicking Print, you will need to specify which printer you are sending it to and, optionally, do any required printer setup before continuing. When you've selected and setup your printer, click OK and the text will be printed. There is little or no need for using landscape mode when printing wheel instructions.

When you select this option, the program will automatically select the Random Plays target combination method. This option ignores the list of suggested numbers, as well as, your selections and draws every available number in the lottery into the pool of numbers to be wheeled. If you are playing an ordered game, such as the daily pick 3, the program will fill the pool for each pick with all available numbers. When you click go the program will generate completely random plays from these full pools. Using this option is equivalent to buying quick pick tickets at your lottery retailer. The only target combination method available with this generation method is Random Plays. Use that option to specify how many quick picks you would like to create.

You can quit the game selection process at any time. To do so, click on Cancel or press Tab until the Cancel button is selected then press Enter. If you are selecting a game from a file you just opened, the open operation will also be canceled and you'll return to the main program window. If there is a game already loaded and being displayed in the data view window, the program will return to that game.

To load the game that is currently highlighted in the game list, click on OK or press Tab until the OK button is selected and press Enter.

Click on the OK button to load the wheel you have selected from the list provided. if you are editing a wheel, the program will decompile the wheel and load it into the wheel editor. If you are deleting a wheel, the program will remove the selected wheel from your database without further comment. Once deleted, the wheel can not be recovered except be re-entering it. If you are executing a wheel, the program will collect your pooled numbers and feed them into the wheel which will, in turn, generate a set of plays.

Analysis

The analysis section describes the results of the self test for the data which is currently being displayed in the confidence index graph at the top left of the self test window and is updated each time you change pick, ordering option or calculation method.

The first line shows which pick is being displayed and what calculation methods are being used (Using the first letter for each active method). The next line shows the range between the upper limit and the lower limit for the pick that is being used to produce the remaining information in the analysis. The third line indicates the total number of tests contained in the graph, in other words, the total that results from adding up the number of times each confidence index was used. The fourth line indicates how many times a winning pick was assigned a confidence index between the upper limit and lower limit set for the pick (i.e. how many winning picks had a confidence index within the range shown). The last line shows what percent of the total number of tests resulted in a winning pick with a confidence index in the specified range. In general you want to use this information to find a set of control limits which produces the highest possible number of "hits" within the smallest possible range of confidence indexes.

Help Button

Clicking this button displays the main [self test](#) help topic which fully describes the operation of the self test and what each option does. For an in depth discussion of the significance and implications of the self test, see the topic on [using the self test](#).

Methods

These options are used to describe which calculation methods you want to see the confidence index analysis displayed for. In general, they work in the exact same fashion as the calculation methods in the main data view. To turn a method on or off, click on the name of the method. If there is a check to the left of the method, the method is active in the analysis, otherwise the method is not being used in the analysis. You do not have to set the method options before running the self test, they are used only to control which set of results are being displayed in the confidence index graph. You can, of course combine methods. Thus, if more than one method is checked, all of the checked methods were combined to produce the results currently being displayed in the graph.

Progress Bars

These two status bars indicate the progress of the self test as the numerical analysis is performed on the past history of the game. The top gauge displays the progress of the individual analysis for each test record and the bottom bar the overall progress of the self test. When both graphs reach the right end of the range, the test is complete and the limit table and confidence index graph are updated. If neither graph is active, the self test is not running.

When you have selected the sorting options you want to use, click on the Go button. The program will resort the data for the current table and redisplay the table using the new sort. Note that this sort can be a little long on a slower machine when viewing pairs and triads.

The Hot To Cold sort option presents the table values in statistical order from the hottest (most frequent or recent values) to coldest (least frequent or oldest). Which sorting option will be used is specified by the option to the right: Avg Age, Cur Age, Med Age and Cur Freq. In order to change sort orders, you must first select this option, then select the order you want to use and, finally, click the Go button to resort the data.

Status Bars

These two status bars are provided just to let you know the program hasn't died when you're running the self test. The top bar will show the progress of each numerical analysis as it is performed and the bottom bar shows the progress of the over-all test. Each nears completion as the bar moves from left to right. Thus, when both the top and bottom bars are at the far right, the self test is complete and the graphs are being updated. If the bars are not visible at all, the self test is not running.

You can click on this icon to display a small menu which gives you the option of moving the dialog or closing the dialog (which is the same as pressing Escape - Esc on your keyboard - or clicking on the Cancel button) You can also double click on this icon to close the dialog in a single step.

This area of the table displays the history of each value. It shows when and where the numbers have hit. The numbers in yellow, along the top edge of this section, represent the draw numbers assigned to each draw in your database. These are the same numbers that appear in the historical data table in the main data view. Any time the value (single number, pair, double, whatever) for this row hits, the program will display the pick number(s) in which it hit under the draw number in which it hit. Thus, if the numbers 13 appear under 555 for the row 4-6, this would mean the number pair 4 and 6 appeared in picks 1 and three in draw number 555. This allows you to see how and where numbers are hitting. If you are viewing the number history table and two or more numbers appeared under the history listing, that would mean the value appeared as a double or triple. i.e. if the numbers 23 appear under 555 for the row 8, that would mean the number 8 came up in both the second and third picks on draw number 555.

The numbers appearing in this column are the actual values being analyzed for the table. When viewing the number history, this will be the individual numbers that make up the lottery. In other words, the individual Ping-Pong balls 1, 2, 3, etc. When viewing doubles, triples or quads these values will be repeating numbers made up of the individual lottery numbers, ie. 1-1, 2-2, 3-3, 4-4-4, etc. When viewing pairs or triads these values will be unique combinations of the numbers making up the lottery. In other words all combinations of the possible numbers without repeating any number. i.e. 1-2, 1-3, 1-4, 1-2-3, etc. but would not include doubles, triples, etc. When using the numerical sort the list will always appear in order from the lowest value to the highest.

Under Construction



This option is currently under construction and, therefore, not available for use in this version of the program.

Use All Option

This option controls how many data points are used to perform the numerical analysis for each test while running the self test and must be set before running the test. Changing the data option after the self test has completed has no effect on the displayed results and the option can not be changed while the test is running.

If you choose this option, LottoMan will use the first 21 data records to perform an analysis of the 21st record, evaluate the results and then start the next analysis. The next analysis will then use the first 21 records to evaluate the 22nd, then the first 22 to evaluate the 23rd, and so on. This is the most exhaustive test, however the results are somewhat skewed as the initial evaluations are based on a small sample set while the latter tests will be based on much more complete sample sets.

Fixed Data Count Option

This option is used to control how many data points are used to perform the numerical analysis for each test as the self test progresses and must be set before you start the test. The option can not be changed while the test is running and changing it has not effect on the displayed results when the test is completed. Unlike the Use All option, this option will use a fixed number of data points to evaluate each test point. To use this option, click on the small diamond to the left of the number value, then click on the number itself and use the keyboard to raise or lower the number of data points to be used.

In this case, setting a value of 300 will cause LottoMan to use the first 300 records to evaluate the 301st record. It will then use records 1-301 to evaluate record number 302, 2-302 to evaluate record number 303 and so on. This has the effect of using the same number of sample points to evaluate each and every remaining record in the database and provides the most consistent analytical results.

In the event that there are more values along the left edge of the table than can be displayed at one time, you may use this scroll bar to move up and down through the list of values. Clicking the arrows at the top or bottom of the scrollbar will move the table up or down one line, clicking on the center button and moving it up or down while holding the left mouse button down will pan through the list of values. Clicking between the center button and the up or down buttons will scroll up or down one screen-full of data at a time. You can also use the keyboard to move through the list. use the up and down arrow keys to move one line at a time, page up or page down to move one screen at a time, ctrl-home or ctrl-end to move to the top or bottom of the list.

Direction

This option must be set before running the analysis and changing it does not affect the results displayed until after you click the Go button. When this option is enabled (checked), the analysis will require that the past plays moved in the same direction as your sample set in order to be considered a match. In other words, if the last winning pick was 5 and the pick before it was 7, the pick moved down (in a negative direction) and each past pick which was less than the pick that preceded it will be considered a match and will be evaluated to see which direction it moved next and how far.

Direction Gauges

These two gauges provide an indication of which direction can be expected for the next pick based on the past performance and the matching methods you have set. The left hand gauge indicates what percentage of past picks moved up and the right gauge indicates what percentage moved down. The actual percentages are displayed below the gauges. The "missing" percentage points are the samples that were repeats of the last pick (i.e. didn't move up or down).

Distance

This option must be set before running the analysis and changing it does not affect the results displayed until after you click the Go button. When this option is enabled (checked), the analysis will require that the past plays moved the same distance (in either direction) as your sample set in order to be considered a match. In other words, if the last winning pick was 5 and the pick before it was 7, the pick moved two points and each past pick which moved up or down two points will be considered a match and will be evaluated to see which direction it moved next and how far.

Go Button/Stop Button

When you first open the vector analysis window, this button appears as a traffic light with the green bulb "lit". Once you have set the matching methods you want to use, the number of data points to be matched, and are ready to start the analysis, click on the Go button. Once you click the button, it will turn into a Stop button (red light "lit"). You can cancel the analysis at any time by clicking the stop button. This will stop the testing without leaving the analysis. You can view the results in the movement graph and direction gauges, set new methods, data points, etc. and restart the test if you like.

Movement Graph

This graph describes how the samples that matched the requirements you set tend to move on the following draw. The bottom of the graph is labeled from a negative value to a positive value and represents the number you would add to the last winning pick to arrive at the next winning pick. The left edge of the graph is labeled from 0 to 100 from bottom to top and represents what percent of the total matching samples moved the distance specified by the number along the bottom of the graph. Interpretation of the center of the graph is fairly straight forward... The higher the percentage for a particular movement, the more likely it is to occur.

You can print this graph at any time by clicking on the right mouse button while the mouse pointer is over the graph. Select the printer you want to send the graph to and, optionally, use the Setup button to change the orientation to Landscape from Portrait. When you are ready to start printing, click on OK.

Help Button

Clicking this button displays the main [vector analysis](#) help topic which fully describes the operation of the vector analysis and what each option does. For an in depth discussion of the significance and implications of the vector analysis, see the topic on [using the vector analysis](#).

Pick Options

These options control which pick's analysis is displayed in the graph and the gauges and need not be set prior to running the vector analysis. To view the analysis for a particular pick, click on the pick you want to view and the graph, gauges and text in the upper portion of the window will be updated to reflect the new pick.

Position

This option must be set before running the analysis and changing it does not affect the results displayed until after you click the Go button. When this option is enabled (checked), the analysis will require that the past plays drew the same numbers as your sample set in order to be considered a match. In other words, if the last winning pick was 5 and the pick you are evaluating was 5, the pick will be considered a match and will be evaluated to see which direction it moved next and how far.

Sample Depth

By default, the vector analysis uses the last winning play as the sample set to be evaluated. This means the direction and distance it had moved from the winning play the preceded it and the number drawn are used as the direction, distance and position that must be matched during the analysis. However, you can increase the number of samples from one (1) to anything up to twenty (20) samples.

If, for example, there were 100 winning plays in your database, setting a value of two would get the direction and distance moved from the 98th record to the 99th, and then the direction and distance from the 99th to the 100th record as two separate sets of values. It would also get the position of the 99th and 100th records to round out the sample set. In order to match (depending on which match options you have checked) both values would have to match for the direction, distance and position. i.e. If the only option checked was direction and the lottery last moved down then up, the analysis would require that the first pick in the test set moved down to the second pick and the second pick moved up to the third in order to be considered a match. The analysis would then evaluate which direction and how far the movement was from the third pick to the fourth.

Samples

This value indicates how many matches were found for the sample set you are using and the matching methods you have selected. In general, the more samples there are, the more meaningful the analysis. Fewer than 20 samples are, typically, unreliable for interpretation.

Use this button to place any numbers you have selected in the left hand list of suggestions or entered into the edit box into the list of pooled numbers. Those numbers will then be used by the wheel in generating your plays.

Click this button to close the number wheel and return to the main data view. Using this option will not generate any new plays or remove any of the plays you have generated from your database.

This text shows how unique plays can be generated from the combinations of the numbers in your pool. At no time can you have more than this number of plays in your database for the same date. Nor can you generate more than this number of plays.

Use this field to specify what date the numbers generated by the wheel will be used on. By default, this will be the first draw date not already stored in the database and won't normally need to be changed. Note that the program will verify the date you enter is a valid play date. If the lottery is not drawn on the date you enter, you will receive a message letting you know the date is invalid.

Use this button to move any numbers you have selected in the right hand list of pooled numbers or the edit box into the list of suggested numbers. This action removes the number(s) from the pool which means that they will not be used in generating your plays.

The edit boxes are provided for entering numbers of your own choosing which are not already listed in the suggestion list. To enter a number, click on the edit for the correct pick, type in the number and click on the add button. The number will be placed into your suggestion list for the pick. Alternatively, if you click on the Del button, the number will be added to the suggestion list but not pooled for wheeling.

This area is used to enter, edit or view the instructions for the wheel. The text describes the nature of the wheel (how many picks it generates, the pool size, number of matches it guarantees, etc.), the source for the pooled numbers (which pick(s) the individual numbers are drawn from) and the templates for each play the wheel generates (how the pooled numbers are combined into plays).

For a description of the wheel language, refer to the Wheel Editing topic.

This option will produce one play for every possible combination of the numbers in your pool. Be careful when using this option, it is capable of producing millions of plays. How many plays will be generated depends on how many numbers are in your pool; the more numbers the more plays, exponentially, that will be generated. You can also think of this option as a guaranty for matching every pick if all of the winning numbers are in your pool. This is, also, why the Guaranty Matches option goes from two picks to one less pick than the number of picks in the game.

Click this button when you are ready to generate plays from your pooled numbers. The number of plays to be generated is shown by the Selected: field directly above this button. How the plays will be generated and the number of plays depends entirely upon the generation method and target combinations options you have selected. Once you've clicked Go, the program will start creating plays and add them to your list of user plays automatically. If, for some reason, the program can not create the specified number of unique plays, a message will be displayed which gives you the option of trying again or giving up. In either case, the plays that were successfully created will remain in the database. The program will not create a duplicate of any play, for the same draw date, already in the database.

This option is only available for games which use non-repeating numbers in conjunction with the Combine Pick Lists generation method. When you click Go, the program will generate a set of plays based on the current pool of numbers which will guaranty a winning ticket in the event that all of the winning numbers are in your pool. How many picks will be matched on that ticket is defined by the number to the right of this option. The default value is two less picks than the number of picks in the game. The minimum value is two and the maximum value is one less than the number of picks in the game. The guaranty ensures a minimum win, it does not mean that you can't match more than the guaranty. The more picks you request be guaranteed, the more plays it will take to cover the pool. Further, the more numbers in the pool, the more plays it will take to cover the pool.

Understanding this option is not easy until you see it. Once you see it, it should seem blatantly obvious in its intent. The following is intended to help describe the process that is involved, theoretically, in creating this set of plays.

Let's assume that we are playing a pick six game with eight numbers in the pool and are requesting the number wheel produce a set of plays that guarantees a minimum of a four pick match. We start by building a list of every possible combination of the eight numbers in the pool and a list of every possible four number combination of those eight numbers. With these lists in hand, we randomly generate a six digit play out of the eight numbers in the pool. We then make a list of every four digit combination of those six numbers and check all of these combinations off our big list of four digit combinations. We keep repeating this process until every four digit combination has been checked off the long list. What we end up with is a group of plays in which there is at least one play for every possible four digit number in the pool. Note, there could be more than one ticket with that same four digit combination. However, there will never be less than one. Further, the way the program goes about this process ensures that the absolute minimum number of plays required to accomplish this goal will be created while keeping the selection of the plays random enough to be unbiased toward any one portion, or another, of the set of pooled numbers. At any rate, when the winning numbers are drawn, if all six of them are in the pool of eight numbers, you are certain to have at least one ticket that matches four numbers. In fact, you would have at least 14 tickets matching four numbers. (see the guaranteed wins topic for an explanation of why this is true). Depending on what numbers were randomly selected to be paired with the four, you might also match five or six numbers though that is not guaranteed. If, on the other hand, only four of the winning numbers were in your pool, you would still have one ticket that matches those four. This topic is covered in much greater detail in the guaranteed wins topic.

This number specifies how many matches you want to guaranty in the set of plays generated when using the Guaranty Matches option. Valid values are between two and one less than the number of picks in the game. (i.e. for a pick six game like lotto, valid values are from 2 to 5). The default value is two less than the number of picks in the game. To change the value, click on the two buttons to the right of the number. The top button increases the value and the bottom button decreases it.

Clicking this button will go directly to the help topic for the [number wheel](#).

This window lists all of the valid wheels in your database. When running the number wheel, the listed wheels will only be those wheels that produce the same number of picks as used by the current game. Otherwise, the list will show all defined wheels.

Each entry shows basic information for the wheel as follows:

P: this is the number of picks the wheel produces. Thus, P6 would be a wheel which produces six number plays.

G: This is the number of matches the wheel guarantees assuming you have selected the winning numbers in the wheel's pool. Thus, G4 would mean the wheel guarantees a four number winning ticket.

R: This value indicates how many of the winning numbers must have been in the wheel's pool to get the guaranty. Thus, G4 R6 would mean the wheel guarantees a four number winning ticket if you have correctly picked six winning numbers in the wheel's pool.

S: This value indicates how many numbers are used to make up the wheel's pool Thus, S14 would mean the wheel expects you to have 14 numbers pooled.

T: This value indicates how many tickets, or plays, the wheel will produce from the pooled numbers. Thus, T036 means the wheel will produce 36 plays. If the price per play were \$1 (as per normal) it would cost \$36 to play all of the tickets generated by this wheel.

This option will randomly select a set of plays from the list of all possible plays for your pool of numbers. Think of this option as building a list of every possible legal play, based on the pool of numbers to be wheeled, and then randomly selecting plays from that list. The number of random selections to be made is determined by the number to the right of this option.

This number specifies how many plays should be created when using the Random Plays target combination method. Valid values are between one and the number of possible combinations of the numbers in the pool. The default value is one. use the two buttons to the right of the number to change the value. The top button raises the value and the bottom button lowers it. You can also use the up and down arrow keys on your keyboard, after clicking on the number or one of the buttons, to change values - this is typically faster than using the mouse.

This text shows how many plays will actually be generated, when you click on the Go button, based on the numbers in your pool and the generation method/target combination methods you have selected. Note that changing the number of matches to guaranty or the number of random plays to generate will not update this text until you click on a method option or modify the pool by adding or removing a number from the pool. Thus, if you change the number of matches to guaranty from three to four, you should click on the Guaranty Matches option again just to update this text. Under no circumstance will the program create more plays than indicated by this value provided you have followed the instructions just given when altering the match count or random selections count.

It **is** possible that the program will generate fewer plays than indicated in this list in the event it can not generate the required number of unique plays. This can happen on two occasions. First, if there are already plays in the database for the same date, some of the combinations they represent may be the same as those being counted here. Second, in some cases the program is trying to randomly generate plays from a small set of possibilities and gets caught in a situation where it is simply taking too long to find a unique play. In this case, it will tell you it is having trouble finding a play not already in the database and give the option of trying some more or throwing in the towel and accepting what you already have. Note that if this happens while creating guaranty match plays, this may result in one or more possible combinations not being covered. In this case, it is recommended that you close the wheel. Delete the incomplete set of plays generated and restart the wheel. You should rarely need to try more than once or twice to generate a complete set of guaranteed match plays.

The numbers which appear in this list are the ones that have been pooled for wheeling. How they will be used in generating plays depends upon the Generation Method you select. Numbers are placed in this list by manually entering them in the edit box for the pick or selecting from the list of suggested numbers and clicking the Add button. Numbers appear in the order in which they were added to the list which has no bearing on their confidence indexes or value. To remove a number from this list, click on the number to select it and then click on Del. The number will be moved from this list to the end of the suggestion list to its left. You can select more than one number before clicking on Del. If there are more numbers in this list than can be displayed at a time, a scroll bar will appear on the right edge of the list which can be used to move up and down through the entries.

This text shows how many numbers are in your pool. If you are using the Combine Pick Lists option or the Completely Random option in conjunction with a game that does not repeat digits), the value shows how many numbers are in the single combined pool. If you are using the Combine By Pick option or the Completely Random option in conjunction with a game that does repeat numbers, the numbers show how many entries are in each of the individual pools. The first number will be pick one and each successive number the remaining picks from lowest to highest.

The numbers that appear in this list are those that are being suggested for use by the program. In other words, any number listed was assigned a confidence index which was between the upper and lower limits specified for that pick based on the analysis methods you have selected. So long as you have not added or removed numbers from this list, they will appear in order from the highest confidence index down to the lowest confidence index. If there are more numbers in this list than can be displayed at one time, a scroll bar appears on the right side of the list. Use this scroll bar to pan through the list of numbers. To pool a number from this list for wheeling, click on the number and then on the Add button (note: you can select more than one number at a time before clicking on Add. Selected numbers will be highlighted). The number will be removed from this list and added to the end of the list of pooled numbers to it's right.

Action Buttons

<Action Buttons>

Activation Codes

Activation codes are two codes (a serial number and a password key) assigned to each registered LottoMan user. These codes permit the registered user to download upgrades to the program as they become available and register them without having to wait for us to send upgrade notices or mail them new disks. To get your own activation codes, you must register your copy of LottoMan. NOTE: Registered users can remove their activation codes from LottoMan by clicking on the Register Your Copy in the Help/About menu option, then enter 0 as the serial number and 0 as the password key.

Aging
<Aging>

America Online

Direct E-Mail to us by writing to page name LHouseEng. We are also located in the Exchange Section/Hobbies/Lottery Players.

BigDesk

BigDesk is another Shareware program available from most BBSs or by contacting SP Services, PO Box 456, Southampton, SO9 7XG, England (FAX/Phone +44 703 550037)

Bonus Digits

<Bonus Digits>

click

Clicking an option, button or selection means moving the mouse until the point of the arrow is over the item you want to use and pressing the left mouse button once and quickly releasing it. You should take some care not to move the mouse much while the button is down as this may change the selection you are trying to make.

Combo Box

A combination box is actually just a list of options. It normally appears as a rectangle with a single item in it and a small button on the right which points down to a line. If you click on this button a list of other options for the combo will drop down. To change items, select one of the other options in the list by clicking on it with your mouse.

CompuServe

CompuServe is a registered trademark of CompuServe, Inc. Direct E-Mail to 74151,1035. We are also located in GO WINSHARE, GO BCPPWIN and GO PBSARC.

confidence index

<Confidence Index>

Control Limits

<Control Limits>

data file

A data file is a file on your hard disk which contains a collection of information. In the case of LottoMan, data files contain information about the games they contain, past winning numbers for each of those games and a record of the numbers you have played in those games. All LottoMan data files end with the file extension .LMD

Delete

<Delete Data>

Delta
<Delta>

dialog

A dialog is a window which is used to tell you something, ask a question or to get information and options from you. In short, it is attempting to establish a dialog with you. Within LottoMan, all dialogs appear as a raised box, usually gray, with a title over the top. If there is a stop sign in the dialog it is very important and generally means something has gone wrong; so read it carefully and write down any information it contains and contact Lighthouse Engineering if you have a problem. Exclamation points mean the information is important... take the time to read the dialog carefully and make sure you are selecting the correct choice before you continue.

Directory Tree

<Directory Tree>

double click

Double clicking the mouse button means pressing the left button and releasing it twice very quickly. This method is often used as a shortcut which allows you to select an item or action and execute it in a single step. For example, when selecting a file from a list of files it has the effect of selecting the file and then executing it or selecting the file and clicking the OK button.

draw

A draw is when the lottery administrators pick the winning numbers. For example, the Virginia Lottery Pick 6 Lotto has two draws per week, one on Wednesday and one on Saturday. There is exactly one winning play per draw. How many winning picks are in the play depends on the lottery.

Drawing Days

<Drawing Days>

Drawing Method

<Drawing Method>

Drive Combo

<Drive Combo>

edit box

An edit box appears as a chiseled rectangle with a blinking cursor in it when selected. Edit boxes are used to allow you to type information such as names, numbers and files into the program. To use an edit box, press the tab key until the blinking cursor appears in the box or click on the box with the left mouse button then type your text but do not press enter at the end of the line.

Edit Numbers

<Edit Numbers>

Edit

<Edit Data>

Edit/Edit
<Edit Data>

Edit/Insert
<Insert Data>

Edit/Recalculate

<Recalculate>

Edit/Select
<Select Data>

File List
<File List>

File Name Edit

<File Name Edit>

File Open Cancel

<File Open Cancel>

File Open Ok
<File Open Ok>

File Save Cancel
<File Save Cancel>

File Save Ok
<File Save Ok>

File Type Combo

<File Type Combo>

File/Close
<Close File>

File/Exit

<Exit Program>

File/New
<New File>

File/Open
<Open File>

File/Rebuild

<Rebuild Database>

File/Save As

<Save File As>

File/Save
<Save File>

Filter Your Plays

<Filter Plays>

First Number

<First Number>

Frequency
<Frequency>

Game List

<Game List>

Game Options Cancel

<Game Options Cancel>

Game Options OK

<Game Options Ok>

Game Options

<New Game>

game title
<game title>

Game/New
<New Game>

Game/Select
<Select Game>

Game/View Definition

<View Definition>

Guaranteed Wins

<Guaranteed Wins>

Help Button

<Help Button>

Help/About
<Help About>

Help/Contents

<Help Contents>

Help/Glossary
<Help Glossary>

Help/Index

<Help Index>

Help/License Agreement

<Help License Agreement>

Help/Register LottoMan

<Help Register LottoMan>

Help/Using Help

<Using Help>

historical data

<Historical Data>

Insert

<Insert Data>

Internet

You can direct Internet mail to us by writing to 74151.1035@compuserve.com.

Last Number

<Last Number>

list box

A list box appears as a chiseled rectangle and generally contains a list of files, numbers or names from which you can choose. To use a list box, press the Tab key until one of the items in the box is highlighted and then use the up and down arrow keys to move the highlight up and down and press the spacebar to select the item that is currently highlighted. Alternatively, you can use your mouse to click on the item you want to select and, in some cases, double click to select the item and continue.

Lottery Name

<Lottery Name>

LottoMan

LottoMan is a trademark of Lighthouse Engineering

LottoWorld Magazine

LottoWorld is a registered trademark of Dynamic World Distributors, Inc.

lower control limit

<Control Limits>

lower limit
<Control Limits>

main menu

The main menu appears as a list of words at the top of your program window... on the left is File and on the right Help, other choices lie in-between the two. These options are your means of telling the program what you want to do. There are several ways you can access this menu and select the options it contains. You can click on one of the options using the left mouse button, press the Alt key and release (or press the F10 key) then use the arrow keys to move to the selection you want, or press and hold the Alt key, then press the underlined letter in the option you want to select and release both keys, and finally, many of the options show a "hot key" to the right of the option... this is a shortcut key (or key combination) you can press to execute that option directly from the keyboard without having to use the menus at all.

Message Text
<Message Text>

Microsoft

Microsoft is a registered trademark of Microsoft Corporation

Minimize Button

<Minimize Button>

Number Of Picks

<Number Of Picks>

Number Theory

<Number Theory>

number wheel

<Number Wheel>

Numerical Analysis

<Numerical Analysis>

Options/Aging
<Aging>

Options/Bonus 1

<Bonus Display Options>

Options/Bonus 2

<Bonus Display Options>

Options/Delta

<Delta>

Options/Frequency
<Frequency>

Options/Pick 1

<Pick Display Options>

Options/Pick 2

<Pick Display Options>

Options/Pick 3

<Pick Display Options>

Options/Pick 4

<Pick Display Options>

Options/Pick 5

<Pick Display Options>

Options/Pick 6

<Pick Display Options>

Options/Trend
<Trend>

Password Key

The password key is the second half of your activation code. There is only one key that will work with each personalized serial number and the shareware version of the program can not be activated (converted to the registered version) without having the correct serial number and password key combination. NOTE: You are responsible for your own serial number and password key combination... don't let others have this information and it will invalidate your licensing agreement and is a violation of copyright laws.

pick

A pick is a single number used in the lottery in question. For example, the Virginia Lottery Pick 6 Lotto is made up of six numbers between 1 and 44. Therefore, each pick is one number between 1 and 44 and there are six picks in a play.

Picking Your Numbers

<Picking Your Numbers>

play

A play is made up of picks where each pick is a number. How many picks are required to make a play depends on the lottery.

Prodigy

Prodigy is a registered trademark of the Prodigy Services Company. Contact the author via Prodigy by writing to K. Scott Piel, KAYX45A. We are also located in the JUMP HOBBIES BB Lottery topic.

ranks

The ranks assigned to numbers are confidence indexes as described elsewhere in this help file. The higher the rang, the higher the statistical probability for the number relative to the rest of the numbers within the same pick.

Registering Your Copy

<Registering Your Copy>

Registration

<Registering LottoMan>

scroll bar

A scroll bar either appears as a bar from left to right or up and down with a small button on each end and another button somewhere in-between. The buttons on the ends have small arrows in them that show which direction they will move the contents of the table, window or graph. Clicking on either of these buttons moves the image on "page" in the direction of the button. On the other hand, you can click on the bar itself on one side, or the other, of the middle button (between the end buttons) and the contents will scroll a full "page" in the same direction as the side of the middle button you clicked on. You can also click on the middle button and hold the mouse button down while moving up and down (or left and right) and the button will move to the place where you let go of the mouse button. The contents will then be moved to that relative position.

scroll

If you think of the contents of the screen as a long piece of paper you are viewing through a small window, the idea of scrolling should be fairly easy to grasp. If you want to see one of the hidden parts of the page, you have to slide the paper up, down, left or right until the part you are looking for can be seen through the window. That is exactly what happens in Windows as well. The data tables and graphs are generally much larger than the space available on the screen to show them in, thus, you can move the imaginary paper they are drawn on underneath the window you're looking at them through to see the hidden parts.

Select Game Cancel

<Select Game Cancel>

Select Game Ok

<Select Game Ok>

self test
<Self Test>

Serial Number

This is a personalized number which Lighthouse Engineering will assign to your account when you have registered your copy of LottoMan. This number can be used to activate updates you download from electronic services and apply for discounts on major new releases. Keep your serial number recorded somewhere for safe keeping.

System Icon
<System Icon>

System Menu

<System Menu>

System/Close
<Close Option>

System/Maximize
<Maximize Option>

System/Minimize

<Minimize Option>

System/Move

<Move Option>

System/Restore

<Restore Option>

System/Size
<Size Option>

System/Switch To
<Switch To Option>

Table Editing

<Table Editing>

the main data view

<The Main Data View>

Trend
<Trend>

Understanding The Tables

<Understanding The Tables>

upper control limit
<Control Limits>

upper limit
<Control Limits>

user picks

User picks are the individual numbers the LottoMan user has chosen to make up a single user play for a given draw.

user plays

A user play is all of the numbers picked by the user, or user picks, to make a single bet on a given draw.

using the self test

<Using The Self Test>

Using The Vector Analysis

<Using The Vector Analysis>

vector analysis

<Using The Vector Analysis>

View menu
<View Menu>

View/Historical Data

<Historical Data>

View/Number Wheel

<Number Wheel>

View/Numerical Analysis

<Numerical Analysis>

View/Play History

<Play History>

View/Self Test

<Self Test>

View/Your Plays

<Your Plays>

Windows

Windows is a trademark of Microsoft Corporation

winning picks

Winning picks are the numbers which were drawn in the lottery. Combining all of the picks for a given draw results in the winning play.

winning plays

The winning play is all of the numbers drawn, or winning picks, for a given draw.

your plays
<Your Plays>

