Contents for RPNCalc Help

RPNCalc is an engineering/scientific unit calculator which provides hundreds of built-in mathematical, trigonometric, complex number, statistical, probability, base, and conversion functions. **RPNCalc** is an RPN (Reverse Polish Notation) based calculator with an **x**, **y**, **z**, **t**, and last**x** memory stack. **RPNCalc** also has 27 storage registers (**A..Z, & i**) with indirect **(i)** addressability. All registers and the display are automatically saved when exiting **RPNCalc** and restored when **RPNCalc** is activated. **RPNCalc** also allows the user to cut and paste data between applications.

To learn how to use Help press F1.

Hyperbolic Functions...
sinh Function
cosh Function
tanh Function

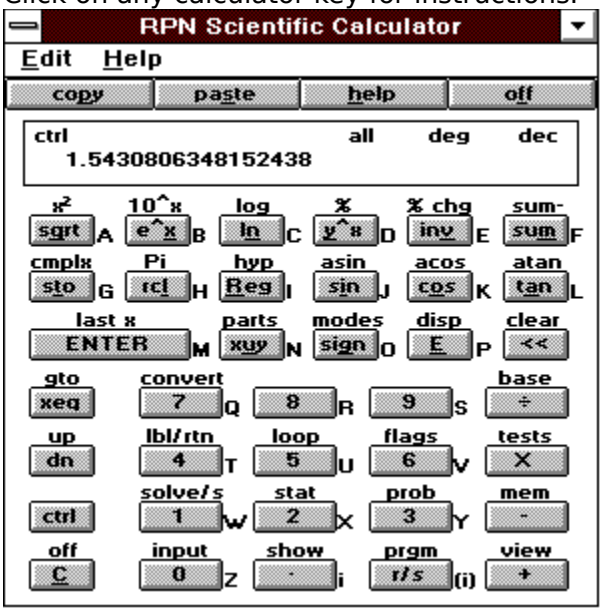
Complex Number Functions...
Complex Numbers

Statistical Functions...
Statistics

Probability Functions...
Probability

The Keyboard

Click on any calculator key for instructions.



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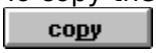
Copy Displayed Value to the Clipboard

To copy the currently displayed value to the clipboard for use in other programs, press 

or press the **p** key or choose **Edit Copy** from the menu.

Paste Value from the Clipboard

To paste a value from the clipboard from other programs, press 

or press the **s** key or choose **Edit Paste** from the menu.

Obtaining Help

To access online help press 

or press the **h** key or choose **Help** from the menu.

Turning the Calculator Off

To turn the calculator off (quit the program), press 

or press the **f** key. The calculator can also be turned off by pressing

or by pressing the **Ctrl** key and then the **C** key. The latest state of the calculator, including display, registers, etc. is saved when the calculator is turned off.

Order the Programmable Version of RPNCalc

To receive the programmable version of **RPNCalc** send $19.95 + $3.00 s/h to:

Legacy Systems
P.O. Box 4146
Redondo Beach, CA 90278.

Or call (310) 540-6016 (24 hours) to order by credit card.

* Educational, Corporate, and Government P.O.s are accepted.
* California residents add $1.65 sales tax. * C.O.D. add $5.00 per order.

Use Functions

Each key on the calculator has two functions: one which appears on the face of the key and a contol function which appears above the key. To access the function which appears above the key first click on 

or press the **Ctrl** key. Next to each key also appears a letter **A..Z, (i), i**. The letters are used with the **sto**, and **rcl** functions to store variables. The letters **A..F** are also used for hexadecimal notation.

Related Topics
Entering Numbers
Backspacing and Clearing

Backspacing and Clearing

Use  or press the backspace key to erase the last character entered or an entire completed number. Use
 or press the **C** key to clear the displayed number to zero. Use

 (**clear**) or press the **Ctrl** and backspace key to clear x, variables, all, or summation registers.

Related Topics
Entering Numbers

Entering Numbers

In the decimal base, numbers of up to 15 digits can be keyed in with a four digit exponent of up to ±4999. A number is entered by keying in the number and then pressing 

or by pressing the **Enter** key or by pressing a function key.

Related Topics
Backspacing and Clearing
Entering Powers of 10
Changing the Sign of Numbers
Performing Arithmetic

Changing the Sign of Numbers

Press 

or press the **g** key to change the sign of a number.

Related Topics
Entering Numbers

Performing Arithmetic

One number functions

To use a one number function such as inv,
sqrt, or
ctrl **x²**, key in the number and then press the function key. The result will be displayed.

Two number functions

To use a two number function such as +,
-,
X, or
÷, key in the first number and then press
ENTER or press the **Enter** key. Key in the second number and then press the function key. The result will be displayed.

Example: Calculate 14 + 8

Press: **14** ENTER **8**
+

Displayed Result: 22.000

Related Topics
Entering Numbers
Memory Stack

Addition

To perform addition, key in the first number and then press 

or press the **Enter** key. Key in the second number and then press


or press the **+** key. The result will be displayed.

Example: Calculate 14 + 8

Press: **14** 

8


Displayed Result: 22.000

Related Topics
Entering Numbers
Memory Stack
Performing Arithmetic

Subtraction

To perform subtraction, key in the first number and then press ENTER or press the **Enter** key. Key in the second number and then press
- or press the **-** key. The result will be displayed.

Example: Calculate 12 - 7

Press: **12** ENTER **7**
-

Displayed Result: 5.000

Related Topics
Entering Numbers
Memory Stack
Performing Arithmetic

Multiplication

To perform multiplication, key in the first number and then press ENTER or press the **Enter** key. Key in the second number and then press X or press the * key. The result will be displayed.

Example: Calculate 9 X 11

Press: **9** ENTER **11** X

Displayed Result: 99.000

Related Topics
Entering Numbers
Memory Stack
Performing Arithmetic

Division

To perform division, key in the first number and then press ENTER or press the **Enter** key. Key in the second number and then press ÷ or press the **/** key. The result will be displayed.

Example: Calculate 45 ÷ 15

Press: **45** ENTER **15** ENTER

Displayed Result: 3.000

Related Topics
Entering Numbers
Memory Stack
Performing Arithmetic

Square Root, Squaring

To find the square root of a number, key in the number and then press ENTER or press the **q** key. The result will be displayed.

Example: Calculate the square root of 144

Press: **144** ENTER

Displayed Result: 12.000

To square a number, key in the number and then press ENTER ENTER or press the **Ctrl** key and then press the **q** key. The result will be displayed.

Example: Calculate 15 squared

Press: **15** ENTER ENTER

Displayed Result: 225.000

Related Topics
Entering Numbers
Memory Stack
Performing Arithmetic

sin, asin Functions

To find the sine of a number using the current angle mode, key in the number and then press  or press the **i** key. The result will be displayed.

Example: Calculate the sine of 30° with the calculator set to the deg angle mode

Press: **30** 

Displayed Result: 0.5

To find the inverse sine of a number using the current angle mode, key in the number and then press 
 or press the **Ctrl** key and then press the **i** key. The result will be displayed.

Example: Calculate the inverse sin of 0.5 with the calculator set to the deg angle mode

Press: **.5** 


Displayed Result: 30

Related Topics
Entering Numbers
Memory Stack
Performing Arithmetic
cos, acos Function
tan, atan Function
sinh Function
cosh Function
tanh Function
Pi Function

cos, acos Functions

To find the cosine of a number using the current angle mode, key in the number and then press cos or press the **o** key. The result will be displayed.

Example: Calculate the cosine of 60° with the calculator set to the deg angle mode

Press: **60** cos

Displayed Result: 0.5

To find the inverse cosine of a number using the current angle mode, key in the number and then press ENTER
cos or press the **Ctrl** key and then press the **o** key. The result will be displayed.

Example: Calculate the inverse cosine of 0.5 with the calculator set to the deg angle mode

Press: **.5** ENTER
cos

Displayed Result: 60

Related Topics
Entering Numbers
Memory Stack
Performing Arithmetic
sin, asin Function
tan, atan Function
sinh Function
cosh Function
tanh Function
Pi Function

tan, atan Functions

To find the tangent of a number using the current angle mode, key in the number and then press  or press the **a** key. The result will be displayed.

Example: Calculate the tangent of 45° with the calculator set to the deg angle mode

Press: **45** 

Displayed Result: 1

To find the inverse tangent of a number using the current angle mode, key in the number and then press 
 or press the **Ctrl** key and then press the **a** key. The result will be displayed.

Example: Calculate the inverse tangent of 1 with the calculator set to the deg angle mode

Press: **1** 


Displayed Result: 45

Related Topics
Entering Numbers
Memory Stack
Performing Arithmetic
sin, asin Function
cos, acos Function
sinh Function
cosh Function
tanh Function
Pi Function

sinh Function

To find the hyperbolic sine of a number, key in the number and then press ENTER

Reg

ENTER or **Ctrl** key and then press the **R** key and then press the **i** key. The result will be displayed.

Example: Calculate the hyperbolic sine of 2

Press: **2** ENTER

Reg

ENTER

Displayed Result: 3.627

Related Topics
Entering Numbers
Memory Stack
Performing Arithmetic
sin, asin Function
cos, acos Function
tan, atan Function
cosh Function
tanh Function

cosh Function

To find the hyperbolic cosine of a number, key in the number and then press ENTER Reg ENTER or **Ctrl** key and then press the **R** key and then press the **o** key. The result will be displayed.

Example: Calculate the hyperbolic cosine of 0.5

Press: **2** ENTER Reg ENTER

Displayed Result: 1.128

Related Topics
Entering Numbers
Memory Stack
Performing Arithmetic
sin, asin Function
cos, acos Function
tan, atan Function
sinh Function
tanh Function

tanh Function

To find the hyperbolic tangent of a number, key in the number and then press ENTER

Reg

tan or **Ctrl** key and then press the **R** key and then press the **a** key. The result will be displayed.

Example: Calculate the hyperbolic tangent of 2

Press: **2** ENTER

ENTER

ENTER

Displayed Result: 0.964

Related Topics
Entering Numbers
Memory Stack
Performing Arithmetic
sin, asin Function
cos, acos Function
tan, atan Function
sinh Function
cosh Function

Exponential, Natural, Common

To find the natural exponential (**e^x**) of a number, key in the number and then press  or press the **x** key. The result will be displayed.

Example: Calculate the natural exponential of -0.25

Press: **.25** 

Displayed Result: 0.7788

To find the common exponential (**10^x**) of a number, key in the number and then press 

 or press the **Ctrl** key and then press the **x** key. The result will be displayed.

Example: Calculate the common exponential of 5

Press: **5** 

Displayed Result: 100000

Related Topics
Entering Numbers
Memory Stack
Performing Arithmetic
Logarithm, Natural, Common

Logarithm, Natural, Common

To find the natural logarithm (**ln**) of a number, key in the number and then press  or press the **n** key. The result will be displayed.

Example: Calculate the natural logarithm of 4

Press: **4** 

Displayed Result: 1.386

To find the common logarithm (**log**) of a number, key in the number and then press 
 or press the **Ctrl** key and then press the **n** key. The result will be displayed.

Example: Calculate the common logarithm of 100

Press: **100** 


Displayed Result: 2

Related Topics
Entering Numbers
Memory Stack
Performing Arithmetic
Exponential, Natural, Common

Power Function

To calculate a number **y** raised to the power **x** key in the first number and then press 

or press the **Enter** key. Key in the second number and then press 

or press the **y** key. The result will be displayed.

Example: Calculate 8 raised to the power of 3

Press: **8** 

3 

Displayed Result: 512.000

Related Topics
Entering Numbers
Memory Stack
Performing Arithmetic

Percentage Function

To calculate **x** percent of **y**, key in the number to take the percentage of and then press ENTER or press the **Enter** key. Key in the percentage then press ENTER y^x or press the **Ctrl** key and then press the **y** key. The result will be displayed.

Example: Calculate 15 percent of 200

Press: **200** ENTER **15** ENTER y^x

Displayed Result: 30.000

Related Topics
Entering Numbers
Memory Stack
Performing Arithmetic
Percent Change

Inverse Function

To find the inverse (**1/x**) of a number, key in the number and then press ENTER or press the **v** key. The result will be displayed.

Example: Calculate the inverse of 25

Press: **25** ENTER

Displayed Result: 0.04

Related Topics
Entering Numbers
Memory Stack
Performing Arithmetic

Percent Change Function

To calculate the percent change from **y** to **x**, key in the first number and then press ENTER or press the **Enter** key. Key in the second number then press ENTER ENTER or press the **Ctrl** key and then press the **v** key. The result will be displayed.

Example: Calculate the percentage change of $19.99 to $26.99

Press: **19.99** ENTER **26.99** ENTER ENTER

Displayed Result: 35.02

Related Topics
Entering Numbers
Memory Stack
Performing Arithmetic
Percentage Function

Pi Function

To obtain the value of Pi to 17 digits press ENTER
rcl or press the **Ctrl** key and then press the **I** key. Pi will be displayed.

Example: Put Pi in x register.

Press: ENTER
rcl

Displayed Result: 3.1415926535897932

Related Topics
Entering Numbers
Memory Stack
Performing Arithmetic

Exchange the X and Y Register Values

To exchange the **x** and **y** register values press 

or press the **u** key. The value which was in the **y** register will be displayed and the value which was in the **x** register is now in the **y** register.

Example: Exchange the **x** and **y** register values where **x** = 3.14 and **y** = 2.2E-4.

Press: 

Displayed Result: 2.2E-4 (3.14 is now in the **y** register)

Related Topics
Entering Numbers
Memory Stack
Reviewing the Memory Stack

Retrieving the LastX Register

The **LastX** register holds the number that was in the **x** register before the last numeric function was performed. To retrieve this value press 

or press the **Ctrl** key and then press the **Enter** key.

Example: Retrieve the contents of the **LastX** register

Press: 

Displayed Result: Value of the **LastX** register

Related Topics
Entering Numbers
Memory Stack
Reviewing the Memory Stack

Reviewing the Register Stack

To review the **x**, **y**, **z**, and **t** register values press 

or press the **R** key. The values in the registers are rolled into view, one register at a time. The value which was in the **y** register will be displayed. The value which was in the **z** register is now in the **y** register, the value which was in the **t** register is now in the **z** register and the value which was in the **x** register is now in the **t** register.

Example: Roll the **x**, **y**, **z**, **t** register values where **x** = 1, **y** = 2, **z** = 3, **t** = 4,

Press: 

Displayed Result: 2 (**y** register = 3, **z** register = 4, and **t** register = 1)

Related Topics
Entering Numbers
Memory Stack
Exchange the X and Y Register Values

Storage Registers A..Z, (i)i, i

To use the storage registers to store values in memory press sto or press the **t** key and then the key corresponding to the letter **A..Z**, **(i)**, or **i**. To use the storage registers to recall values from memory press
rcl or press the **l** key and then the key corresponding to the letter **A..Z**, **(i)**, or **i**.

Example: Calculate: 14 + 8 and store the result in register **J**.

Press: **14** ENTER **8**
ENTER

Displayed Result: 22.000

Press: sto
ENTER

Memory Stack

The memory stack consists of the **x**, **y**, **z**, **t**, and **last x** registers. The "oldest" number entered is in the **t** (top) register. The most "recent" number is in the **x** register which is also the number shown in the display. The contents of the stack automatically move up as new numbers are entered and down as operators combine two numbers to produce one number.

Related Topics
Entering Numbers
Performing Arithmetic

Complex Numbers

Complex numbers are placed in the memory stack as sets of two double registers which consist of the **x** and **y** registers corresponding to the real and imaginary parts of the second number entered and the **z** and **t** registers corresponding to the real and imaginary parts of the first number entered i.e. Z2 = **x** + i**y**, Z1 = **z** + i**t**. The following functions may be used for complex numbers:
ENTER,
ENTER,
ENTER,
ENTER,
ENTER,
ENTER,
ENTER,
ENTER,
ENTER,
ENTER,
ENTER,
ENTER, and
ENTER. To use these operators for complex numbers first press
ENTER, and then press
sto.

Example: Calculate: (14 + 8i) + (22 + 2i)

Press: **8** ENTER **14**
ENTER **2**
ENTER **22**
ENTER
sto
ENTER

Displayed Result: 36.000 (the displayed result is the real part, the y register contains 10 which is the imaginary part)

Related Topics
Entering Numbers
Performing Arithmetic

Summation Registers

There are six summation registers for performing statistical calculations. The summation registers consist of the **n** (accumulated data sets) register, the **x sum** register, the **y sum** register the **x²** register, the **y²** and the **xy** register. To add a data set to the summation registers press 

or press the **m** key. To remove a data set from the summation registers press


or press the **Ctrl** key and the press the **m** key.

Related Topics
Entering Numbers
Performing Arithmetic
Statistics

Entering Powers of 10

Press  or press the **E** key to enter a power of 10. A four digit exponent of up to ±4999 can be entered.

Related Topics
Entering Numbers

Changing the Display Format

Press ENTER
E or press the **Ctrl** key and then press the **E** key to use the display dialog box to select **All**, **Scientific** of **Fixed** number formats.

Related Topics
Entering Numbers

Changing the Number Base

Press ENTER
ENTER or press the **Ctrl** key and then press the ÷ key to use the base dialog box to select and convert between **Binary**, **Octal**, **Hexadecimal** or **Decimal** base formats.

Related Topics
Entering Numbers

Changing the Angle Mode

Press 

or press the **Ctrl** key and then press the **g** key to use the angle mode dialog box to select **Radians**, **Gradians**, or **Degrees** angle formats.

Related Topics
Entering Numbers
Conversions

Conversions

Press ENTER
7 or press the **Ctrl** key and then press the **7** key to use the convert dialog box to convert **Polar-Rect**, **Angle**, **Temperature**, **Mass**, **Length**, or **Time** values.

Related Topics
Entering Numbers
Changing Angle Mode

Parts of Numbers

Press ENTER
ENTER or press the **Ctrl** key and then press the **u** key to use the parts dialog box to obtain the **Integer**, **Fractional**, **Rounded**, or **Absolute Value** part of a number.

Related Topics
Entering Numbers

Statistics

Press ENTER
2 or press the **Ctrl** key and then the **2** key to use the statistics dialog box to obtain statistics on numbers accumulated in the summation registers.

Related Topics
Entering Numbers
Summation (statistics) Registers

Probability

Press ENTER
3 or press the **Ctrl** key and then press the **3** key to use the probability dialog box to obtain probability functions of numbers entered in the **x** and **y** registers. For permutations and combinations the **y** register is equivalent to **n** (entered first), the **x** register is equivalent to **r**. For factorials the **x** register contains the value to calculate the factorial of. For random numbers, the **x** register contains the seed value.

Related Topics
Entering Numbers