Money Smith Financial Calculator
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Calculator Commands

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Setting up the Calculator

The Money Smith calculator can be set up in a number of ways depending on the source you received it from.

Procedure: From floppy drive using setup
1. Choose the File Run command from your Windows Program Manager.
2. Type in the appropriate path to the setup program as in "B:\Setup" (without the quotes).
3. Type in the disk to install from and to. Usually the defaults are fine.
4. Answer Yes when setup asks you if you want it installed in the program manager.

Procedure: From shareware archived ZIP or LZH file.
1. Run the program to unpack the calculator file as in "pkunzip mscalc.zip". This is highly dependent on the method used to archive the package. Popular archives are PKZIP and LHARC with commands like 'pkunzip mscalc.zip' and 'lharc -x mscalc.arc'. Refer to your particular packing program.
2. Once you have the package unpacked you can either install the executable 'mscalc.exe' in the program manager yourself (refer to Windows Manuals) OR let setup do this for you by running setup from the unpacked version as shown above. Be sure to specify the full path to the directory you have unpacked mscalc into as in "c:\public\setup.exe'.

Related Topics:
How to use the calculator Using the Money Smith Calculator.

Using the Calculator

You can use the Money Smith calculator just like a regular calculator. It performs the basic functions shown below using either infix or postfix notation.   The algebraic expression is shown on the top left and intermediate result shown to the right. The number of digits shown correspond to the current currency settings (Set currencies from the windows control panel international area).

To start a calculation just clear the calculator using the 'C' button and type in an expression as you would on most any calculator. The backspace key lets you back up if you make a mistake.

Button Function
C   Clear expression
<-   Backspace
^   Raise to power
*, /   Multiply, Divide
+, -   Add, Subtract
( )   Group infix expression
=   Evaluate expression
Enter   Enter Postfix Number

Using Financial Functions
To perform a financial function, just press the button corresponding to the desired function. (PV is present value for example). Type in the required information and the result will be displayed at the bottom of the dialog. Press the OK button to save the result to the calculator or press the Cancel button to discard the result and return to the calculator.

Compound Financial Calculations
You can use financial calculations in series to perform more complicated functions. For example suppose you want to compute the value of a the $10,000 you have in an IRA if you continue to add $2000 per year to it for 10 years. First press the FV button to calculate what your initial $10,000 will be worth in 10 years. When you have filled out that dialog press the OK button. Press the '+' button on the calculator to indicate you want to add to the current value. Next press the FVA button to calculate the value of your additional $2000 per year deposit for the 10 years. When this dialog is filled out press the OK button and you will see the FV and FVA values added together. Press the '=' button to finish the calculation off.
You can chain any of the financial functions together in this way to get more complicated results. Just remember to press an operator like '+' between major financial functions so your results get added together rather than overwritten.

Examples: Infix (Normal) Algebra
Expression   Result
100+3*2= $106.00
(5+4)*9 $81.00
80.8/(2^3) $10.10

Examples: Postfix (Reverse Polith. Infix algebra is generally of the form (Number Operator Number).
Expressions are evaluated with the exponent operator having the highest precedence, divide and

multiply the next highest, and plus and minus the lowest precedence.

Procedure:
1. Choose the Options Infix Algebra command from the menu.
2. Clear the calculator and type in an algebraic expression.

Examples: Infix (Normal) Algebra

Expression	Result
100+3*2=	$106.00
(5+4)*9	$81.00
80.8/(2^3)	$10.10

Related Topics:
Calculator Index Index of functions.
Postfix Command Switch to Postfix Algebra.

Postfix Algebra Command

This command sets the calculator mode to postfix algebra. This is the reverse polish notation used by scientists and engineers, and popularized by the Hewlett-Packard line of calculators. Numbers are placed on a numeric stack with most operators working on the top or top two numbers on the stack. Note that the enter key pushes numeric values on the stack and the equal key forces evaluation of the current expression. Note also that all smart number entry fields will work in postfix mode when postfix is chosen.

Procedure:
1. Choose the Options Postfix Algebra command from the menu.
2. Clear the calculator and type in a Postfix expression.

Examples: Postfix (Reverse Polish) Algebra

Expression	Result
100 3 2 * +	$106.00
5 4 + 9 *	$81.00
80.8 2 3 ^ /	$10.10

Related Topics:
Calculator Index Index of functions.
Infix Command Switch to Infix Algebra.

Present Value (PV) Function

This function performs simple present value calculations based on a future value and fixed interest rate.

Procedure:
1. Choose the PV button or Present Value function from the menu.
2. Enter the future value, interest rate per period and number of periods. The display will be automatically updated with the calculated present value.

3. Press OK to have the result entered in the calculator or press Cancel to discard the result.

Examples: Present Value
Q: How much money do I need to invest at an annual rate of 10% to get $10,000 in 15 years?
A: Enter Future Value=10,000   Interest=10 Num of Periods=15 gives result of $2393.92.

Q: How much do I need to invest now at an annual rate of 8% to get $100,000 in 10 years if interest is compounded monthly?   (Use smart number feature based on 12 months)
A: Enter FV=100000 Interest=8/12 and Number of periods=12*10 gives result of $52,841.35

Related Topics:
Calculator Index Index of functions.
Present Value of Annuity (PVA) function.

Present Value of an Annuity (PVA) Function

This function performs simple present value calculations based on a fixed periodic investment.

Procedure:
1. Choose the PVA button or Present Value of an Annuity function from the menu.
2. Enter the payment amount, interest rate per period and number of periods. The display will be automatically updated with the calculated present value of the annuity.
3. Press OK to have the result entered in the calculator or press Cancel to discard the result.

Examples: Present Value of an Annuity
Q: What's the present value of an annuity of $5,000 per year for 10 years assuming a 7% interest rate?
A: Enter Payment=5000   Interest=7 Num of Periods=10 gives result of $35,117.91.

Q: A retailer is selling a video camera financed at a price of $30 per month for 48 months at 10% interest (compounded monthly). How much am I paying for the camera including financing in todays dollars?
A: Enter Payment=30 Interest=10/12 and Number of periods=48 gives result of $1,182.84.

Related Topics:
Calculator Index Index of functions.
Present Value Function (PV) function.

Present Value of a Perpetuity (PVP) Function

This function performs simple present value calculation of the value of a perpetual payment. Examples of perpetuities are fixed income preferred stock, and lifetime fixed payments like pensions or lifetime annuities. (Note: A true perpetuity pays forever, but pensions and the like can often be thought of as perpetuities because you are not particularly concerned with the value of the pension after your death.)

Procedure:
1. Choose the PVP button or Present Value of a Perpetuity function from the menu.
2. Enter the payment amount, and effective interest rate per payment period. The display will be

automatically updated with the calculated present value of the perpetuity.
3. Press OK to have the result entered in the calculator or press Cancel to discard the result.

Examples: Present Value of a Perpetuity
Q: What's the present value of a perpetuity that pays $1000 per year indefinitely if you discount inflation at 7% per year?
A: Enter Payment=1000   Interest=7 gives result of $14,285.71..

Q: What's the value of my $3000 per month fixed lifetime pension if I expect a 5% inflation rate per year.
A: Enter Payment=3000 Interest=5/12 gives result of $720,000.

Related Topics:
Calculator Index Index of functions.
Present Value of Annuity Function (PVA) function.

Present Loan Payment (PMT) Function

This function calculates the payment for a loan given the present value, interest rate, and number of periods.   It can be used to calculate your loan payment for your car, house, etc...

Procedure:
1. Choose the PMT button or Present Loan Payment function from the menu.
2. Enter the loan amount (in present dollars), effective interest rate per payment period, and number of periods. The display will be automatically updated with the calculated payment per period for the loan.
3. Press OK to have the result entered in the calculator or press Cancel to discard the result.

Examples: Present Loan Payment
Q: What's the monthly loan payment on a car that has a total cost of $14,000 assuming 8% annual interest and a 48 month loan?
A: Enter Loan Amount=14000   Interest=8/12 and Number of Periods=48 gives result of $341.78.

Q: What's the yearly payment on a house costing $100,000 at an interest rate of 10% financed for 30 years?
A: Enter Loan Amount=100000   Interest=10 and Number of Periods=30 gives result of $10,607.92.

Related Topics:
Calculator Index Index of functions.
Present Value of Annuity Function (PVA) function.

Future Value (FV) Function

This function performs simple future value calculations based on a present value and fixed interest rate.

Procedure:
1. Choose the FV button or Future Value function from the menu.

2. Enter the present value, interest rate per period and number of periods. The display will be automatically updated with the calculated future value.
3. Press OK to have the result entered in the calculator or press Cancel to discard the result.

Examples: Future Value
Q: If I invest $10,000 now at a fixed interest rate of 10% how much will I have in 15 years?
A: Enter Present Value=10,000   Interest=10 Num of Periods=15 gives result of $41,772.48.

Q: If I put $1,000 in a savings account paying 5% compounded quarterly how much will it be worth in 5 years?   (Use smart number feature based on 4 quarters/year)
A: Enter Present Value=1000 Interest=5/4 and Number of periods=4*5 gives result of $1,282.84.

Related Topics:
Calculator Index Index of functions.
Future Value of Annuity (FVA) function.

Future Value of an Annuity (FVA) Function

This function performs a simple future value calculation based on a fixed payment and fixed interest rate. It can be used to calculate the future value of fixed periodic investments.

Procedure:
1. Choose the FVA button or Future Value of Annuity function from the menu.
2. Enter the payment value, interest rate per period and number of periods. The display will be automatically updated with the calculated future value of the annuity.
3. Press OK to have the result entered in the calculator or press Cancel to discard the result.

Examples: Future Value of Annuity
Q: If I invest $2,000 per year in an IRA at a fixed interest rate of 10% how much will I have in 15 years?
A: Enter Payment=2000   Interest=10 Num of Periods=15 gives result of $63,544.96.

Q: If I invest $100 per month in an investment paying 7% (compounded monthly) how much will I have in 8 years?
A: Enter Present Value=100 Interest=7/12 and Number of periods=8*12 gives result of $12,819.88.

Related Topics:
Calculator Index Index of functions.
Future Value (FV) function.

Investment Required for a Future Value (INV) Function

This function calculates the fixed payment needed to reach a certain investment goal in a fixed number of years at a fixed interest rate.

Procedure:
1. Choose the INV button or Future|Investment for a Future Value function from the menu.
2. Enter the Future Value, interest rate per period and number of periods. The display will be

automatically updated with the calculated investment required.
3. Press OK to have the result entered in the calculator or press Cancel to discard the result.

Examples: Investment Required for Future Value
Q: I want to be a millionaire in 30 years - how much do I need to invest yearly at a fixed interest rate of 10% to get my first million?
A: Enter Future Value=1000000 Interest=10 Num of Periods=30 gives the rather modest result of $6,079.35 per year! Start saving!

Q: You want to save for your child's college. You estimate the total cost of her college 15 years from now to be $400,000 in future dollars. How much do you need to invest each month at a rate of 9% (compounded monthly) to send her to school?
A: Enter Future Value=400000 Interest=9/12 and Number of periods=15*12 gives result of $1,057.07.

Related Topics:
Calculator Index Index of functions.
Future Value (FV) function.

Effective Annual Interest (EffI) Function

This function calculates an effective interest rate based on a fixed interest rate and number of periods the interest is compounded over yearly. For example a 10% fixed interest rate compounded monthly gives an effective annual rate of 10.47%.

Procedure:
1. Choose the EffI button or Other|Effective Annual Interest function from the menu.
2. Enter the interest rate per year and number of periods the interest rate is compounded over per year. The display will be automatically updated with the calculated effective annual rate of interest.
3. Press OK to have the result entered in the calculator or press Cancel to discard the result.

Examples: Effective Annual Interest
Q: My bank offers 5% on savings with dividends compounded quarterly. What's the effective annual rate?
A: Enter 5% annual interest with 4 periods per year gives an annual rate of 5.09%.

Q: A money market fund offers 7.2% compounded daily. What's the annual rate assuming the fund holds a 7.2% yield for the year?
A: Enter Interest=7.2% and 365 periods per year gives effective rate of 7.46%.

Related Topics:
Calculator Index Index of functions.
Internal Rate of Return (IRR) function.

Internal Rate of Return (IRR) Function

This function calculates the effective rate of interest for a investment given a present value, future value, and Number of Periods. Note that for sales of held items the Present Value may be the purchase

price of the investment and the Future Value may be the sales price of the investment.

Procedure:
1. Choose the IRR button or Other|Internal Rate of Return function from the menu.
2. Enter the Future Value, Present Value and number of periods in the dialog. The display will be automatically updated with the calculated effective rate of interest per period.
3. Press OK to have the result entered in the calculator or press Cancel to discard the result.

Examples: Internal Rate of Return
Q: A zero-coupon bond sells for $800 and with a face value of $1000 maturing in 4 years. What's the rate of return for the bond?
A: Enter Present Value=$800, Future Value=$1000 and 4 periods gives a returned rate of 5.74%.

Q: You sold your house that you held for 10 years. Your purchase price was $50,000 and sales price was $100,000. What return did you get on your real estate investment?
A: Enter Present Value=$50,000 and Future Value=$100,000 over Number of Periods=10 gives effective rate of 7.18%.

Related Topics:
Calculator Index Index of functions.
Internal Rate of Return for an Annuity (IRRA) function.

Internal Rate of Return for an Annuity (IRRA) Function

This function calculates the effective rate of interest for a regular investment given a payment, future value, and Number of Periods.

Procedure:
1. Choose the IRRA button or Other|Internal Rate of Return for Annuity function from the menu.
2. Enter the Payment, Future Value and number of periods in the dialog. The display will be automatically updated with the calculated effective rate of interest per period.
3. Press OK to have the result entered in the calculator or press Cancel to discard the result.

Examples: Internal Rate of Return for Annuity
Q: You have invested $100 per month over 5 years in a fund now worth $8000. What's your effective annual return?
A: Enter Payment=100*12, Future Value=$8000 and 5 periods gives a returned rate of 14.43%.

Q: You put $2000 per year in your IRA accounts for the last 10 years. They now have a total value of $40,000. What's your overall annual rate of return?
A: Enter Payment=2000 and Future Value=40000 over Number of Periods=10 gives effective rate of 14.74%.

Related Topics:
Calculator Index Index of functions.
Internal Rate of Return (IRR) function.

ACRS Depreciation (ACRS) Function

This function calculates the depreciation for a given year based on the 1986 version of the ACRS depreciation tables. You enter the purchase price, select the class of property, and enter the year.

Classes are as follows: 1986 act - Note regulations change yearly so please consult a tax publication before using!

Class   Type of Property
3 Year Research Equipment
5 Year Autos, Tractors, Trucks, Computers
7 Year Industrial Equipment, Office Furniture
10 Year   Long Lived Equipment
27.5 and 31.5 Year   Real Estate, Buildings

Note that 27.5 and 31.5 Year property is not supported by this tool because it is depreciated on a straight line basis pro-rated from the month placed in service.

Procedure:
1. Choose the ACRS button or Other|ACRS Depreciation function from the menu.
2. Enter the purchase price of the property, choose the correct property class, and enter the year you want depreciation calculated for.
3. Press OK to have the result entered in the calculator or press Cancel to discard the result.

Examples: ACRS Depreciation
Q: You buy a new computer for $3,000 for your business. What's your first year ACRS depreciation?
A: Enter Price=3000, Class=5-Year, Year=1 gives depreciation of $600.

Q: You purchase a truck for your business use for $20,000. You are in the third year of writing it off. What's your depreciation for the third year?
A: Enter Price=20000, Class=5-Year, Year=3 gives depreciation of $3,800.

Related Topics:
Calculator Index Index of functions.
Internal Rate of Return (IRR) function.

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If I missed any other credits, it was unintended, so please write and I'll be sure to include them in future versions.

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