M-B-A-nalyst Help Index

Note: For *context-sensitive* help on a particular function, press Shift+F1 and then click on the desired function key.

Annuity/Actuarial Functions Amortization Arithmetic **Bond Calculations** Cash Flow Convention Clearing Numbers Compound Interest Date Arithmetic Depreciation Discounted Cash Flow Analysis Interest Rate Conversions Markup Functions Math Functions Simple Interest Statistical Functions Storage Registers

Arithmetic

Arithmetic equations are entered just as they would be written on paper. Calculations are performed in the order they are entered. Parenthesis can be used to change the order of evaluation of arithmetic calculations.

For example, to calculate 20 + 3 * 2, you would enter this equation as shown and press the equals key. The result is 46.00. Note that M-B-A-nalyst evaluates the equation in the order entered, i.e. as (20 + 3) * 2, not 20 + (3 * 2).

To change the sign of a number in the display, press the +/- key. Do not use the - key as it is used for subtraction.

The function key is used to delete incorrectly entered digits in a number or equation as it is being entered.

Memory Storage Registers

M-B-A-nalyst has 10 general purpose memory storage registers and 8 special purpose financial registers. To store a number in a memory register, key in the number and press <u>STO</u> followed by a number 0 through 9. Numbers can be stored in financial registers in the same manner. To recall a number from a storage register, press <u>RCL</u> followed by a 0 through 9.

To view all memory registers click on the Mem function key.

The <u>STO</u> function can work in conjunction with the operations of addition, subtraction, multiplication, and division. For example, to add a number to the contents of a storage register, click on

STO then

+ followed by the desired register number.

Clearing Numbers

Clear the display by pressing CLR. M-B-A-nalyst is now ready to accept another entry. M-B-A-nalyst does not require a separate key for clearing a number and a different key for clearing the last entry.

To clear the last digit entered, press the key. For example, if you wished to enter 123.45 and accidently entered 123.46, you would press and key in 5.

Clear all registers with the CITAL key or clear the financial registers with the CITEN function key.

Edit - Clipboard Functions

The Edit menu is used for transferring numbers between M-B-A-nalyst and other application programs. To transfer a number from M-B-A-nalyst to the clipboard, select <u>Copy</u>. To transfer a number into M-B-A-nalyst from the clipboard, select <u>Paste</u>.

Edit Copy

Copies a number shown in the display into the clipboard. The number can then be <u>pasted</u> into another application.

Edit Paste

Copies a number from the clipboard into M-B-A-nalyst. Used to transfer numbers into M-B-A-nalyst from other applications.

Cash Flow Convention

Compound interest calculations involve both the paying and receiving of monies. For example if you take out a loan, you initially receive money from the bank, then you must pay money to the bank at periodic intervals. Likewise if you deposit money into a savings account, you are paying money into that account and receiving money later in terms of what you have earned as interest.

M-B-A-nalyst uses a cash flow convention to designate the paying and receiving of monies. Money paid is always a negative number, since it is being subtracted from a source. Similarly, money received is a positive number. Be sure to use this cash flow convention when computing financial calculations with M-B-A-nalyst.

Example: Assume you were going to take out a loan and wanted to calculate the number of payments you would have to make. The present value (amount of the loan) would be entered as a positive number since it represents money received and the monthly payment would be entered as a negative number since it represents money paid out.

Using a Constant

M-B-A-nalyst provides the \boxed{K} key as a shortcut in situations where you desire to perform the same calculation a number of times while changing one of the two operands.

For example, if you entered $4 \times \boxed{\mathbb{K}} 8 =$, the result 32.00 would be displayed and $4 \times$ would be stored as the constant. Then if you pressed 7=, 28.00 would be displayed because $4 \times 7 = 28.00$.

You can continue to use this constant as many times as needed until either M-B-A-nalyst is closed or another constant is entered.

Compute Function Key

The CPT function key is used in compound interest calculations and in discounted cash flow analysis calculations.

In compound interest calculations involve the variables present value, future value, interest rate per year, payment amount, and number of compounding periods. Four of the five variables must be stored in financial registers and the fifth can be computed by pressing the <u>CPT</u> key followed by either

PV . FV -1/YPMT or

N. Numbers can be <u>stored</u> in the financial registers using the

STD function key, followed by one of the above mentioned financial register keys. Compound interest calculations can also be performed using the <u>FIN</u> dialog box function.

In discounted cash flow analysis calculations, the <u>CPT</u> function key is pressed followed by either the

NPV .

NFV or

IRR function. Prior to using this function, the cash flow data must have been entered using the Data function. The interest rate must also have been stored in the I financial register.

Cash Flow Data Entry

The Cash Flow Data Entry dialog box is used to enter the cash flows for subsequent use in the calculation of NPV, NFV, or IRR calculations.

Up to 20 unique cash flows can be entered. Positive numbers represent positive cash flows and negative numbers represent negative cash flows.

Cash flows can be grouped. If a number of sequential cash flows all represent the same amount of money, the **frequency of occurrence** prompt can be set to the number of consecutive cash flows of the same amount.

Breakeven Options

The Breakeven Options dialog box is used to determine which variable to calculate; fixed cost, variable cost, unit price, profit, or quantity. Four of the five variables must be known and the fifth can then be calculated.

Annuity Calculations

These functions allow for the calculation of Single Payment Present Value (SPPV), Single Payment Future Value (SPFV), Uniform Series Present Value (USPV), or Uniform Series Future Value (USFV).

The interest rate is the percentage rate at which interest is compounded each period.

The number of periods represents the total number of compounding periods for which the calculation is to be made.

Payment Mode Options

Allows you to set the number of payments per year and the number of compounding periods per year, and whether the payments are made at the beginning of a compounding period (annuity due), or at the end of the period (ordinary annuity).

This setting affects compound interest calculations performed using the FIN function key as well as calculations using CPT function key followed by

LPI	tun
ΡV,	
FV	
N	
N	or
PMT	

The number of payments per year also affects the \overrightarrow{PM} function key. For information on this function, <u>click here</u>.

Number of Payments per Year

The $\overrightarrow{\text{MPM}}$ function key can be used as a shortcut in <u>compound interest</u> calculations where the number of payments is an even number of years. When the $\overrightarrow{\text{MPM}}$ key is selected, the number in the display will be multiplied by the number of <u>payments per year</u>, and the result will be stored in the N financial register.

Rounding Numbers

M-B-A-nalyst allows for the display of up to 9 digits to the right of the decimal point. However, numbers are kept to 15 significant places internally within the calculator. To round a number in the display so that its internal representation is the same as the value shown in the display, press the RND function key.

Breakeven Calculations

Calculates the breakeven point or the required number of units sold to achieve a particular profit level. Any four of the variables must be known and the fifth can be calculated. The fixed cost field represents the one-time cost independent of the number of units produced, variable cost is the unit cost, price is the selling price, and profit represents the required or computed profit margin.

Key in the known values for the four variables and select the Compute button to obtain the result.

Statistics Calculations

Statistics data are entered using the Data function key.

M-B-A-nalyst automatically computes the mean and standard deviation for both X and Y values when the \underline{Stat} function is invoked. A linear estimate for either X or Y data and a correlation coefficient can be calculated if desired. Select X or Y to be estimated and then enter the value for the other data point and select the Compute button.

Last Answer Function

This function displays the last answer calculated. The last answer can be used in subsequent calculations.

Permutations and Combinations

M-B-A-nalyst can calculate these common probability functions. Combinations are the number of groups of n items, taken in groups of r, without regard to their order. Permutations are the number of different changes in position possible within a group of n items where the group size is r.

To use either function, key in a number for n, then press nPr or nCr then key in a number for r and press the equals key.

Profit Margin Calculations

Used to calculate the cost, price, or profit margin of an item. Any two variables must be known and the third can then be calculated.

Select the desired value to be calculated and then key in the known values for the other two variables and click on the Compute button.

Simple Interest Options

Simple interest calculations are computed where interest is not compounded periodically but rather is a single fixed amount over a fixed period of time. Simple interest can be computed using either a 360 or 365 day calendar year. The Simple Interest functions can calculate for accrued interest, annual interest rate, principal amount, or number of days. Any four of the variables must be known and a fifth can then be calculated.

Compound Interest Options

Compound interest calculations involve monies where interest is computed at regular compounding periods. The Compound Interest functions can calculate for present value, future value, interest rate per year, number of years, or payment amount. Any four of the variables must be known and a fifth can then be calculated. Compound interest calculations are affected by the payment mode options

Annuity Options

The functions in this group are used in many different business applications, especially in actuarial and annuity calculations.

Single Payment Present Value (SPPV) calculates the value in the present of \$1 to be received after a specified amount of time has past with interest compounding at a certain rate.

Single Payment Future Value (SPFV) calculates the value at some future time of \$1 received in the present, with interest compounding at a certain rate.

Uniform Series Present Value (USPV) calculates the value in the present of a series of \$1 payments to be received at regular intervals with interest compounding at a certain rate.

Uniform Series Future Value (USFV) calculates the value of a series of \$1 payments at regular intervals after the last payment has been made with interest compounding at a certain rate.

Business Calculation Options

The cost, price, or percentage markup is calculated. Any two of the variables must be known and the third can be computed. This option allows the markup calculation to be computed based on either the cost of the item or the price of the item.

Trigonometric Functions

These functions allow for the computation of sine, cosine, and tangent and their inverses and hyperbolics. Calculations can be made in either degrees or radians and can be set using the Opts function. By default, calculations are made using degrees.

To compute the inverse of a trig function, press the $\square N \lor$ function before pressing the $\underline{\square N \lor}$,

COS , or

TAN function. Hyperbolics can be calculated in the same manner by using the HYP function key.

Depreciation Options

M-B-A-nalyst can perform depreciation calculations using several different methods. Select either the straight line, sum-of-years-digits, declining balance, or double declining balance method.

Each option requires the cost, salvage value, asset life, and year to be calculated. In addition, the declining balance method requires a declining balance factor to be entered.

This function calculates the depreciation, remaining depreciable value, and remaining book value.

Statistics Data Entry

M-B-A-nalyst allows for both one and two variable statistics calculations. Statistics data are entered with the Data function. Data are entered as X and Y pairs. Key in the numbers desired for each pair of data and then press the "Next" button to enter the next pair. Up to 50 data pairs can be entered. The "Clear All" button is used to clear all the data pairs in preparation for a new set of data to be entered.

Options

The digits field allows you to change the number of digits to the right of the decimal point and can range from 0 to 9. Note that the internal representation of the number does not change when this option is set, only the way the number is displayed.

The Trig Mode option allows for trig functions to be calculated using either degrees or radians as the angle units. This option affects calculations involving the SIN, COS,

_____, and _____ function keys.

The Separators option allows the switching between English and European separators. English separators use a decimal point to separate the whole part of a number from the fractional part, and a comma between each three digits to the right of the decimal point. European separators are just the opposite.

Amortization Calculations

This function computes the principal, interest, and loan balance for a particular payment or series of payments. The present value, interest rate, and payment amount of the loan must be <u>stored</u> in the PV, I, and PMT financial registers before an amortization calculation can be performed.

In general, a compound interest calculation will be performed before an amortization calculation. Compound interest calculations automatically put values in the PV, I, and PMT registers. You can also manually store values in these registers by keying in a value and then pressing STO, STO or STO.

Depreciation Calculations

Key in the values for cost, salvage value, asset life, and year to be depreciated. If you are calculating depreciation using the declining balance method, you must also enter a declining balance factor.

This function computes the depreciation for the year being depreciated, as well as the remaining book value and the remaining depreciable value of the asset.

Simple Interest Calculations

Enter values for the three known variables and press compute to determine a value of the unknown variable.

Compound Interest Calculations

Allows the computation of present value (PV), future value (FV), interest rate (I/YR), payment amount (PMT) or number of payments (N). Any four variables must be known and the fifth can then be calculated. To store a number in a compound interest variable, key in the number and then select the variable. To solve for an unknown variable, select STO followed by the variable. The compound interest variables are invoked with the STO, STO,

STO, and STO function keys.

When performing compound interest calculations, the proper <u>cash flow convention</u> must be observed. When the function is computed, the result will be displayed and the values will be stored in the PV, FV, I, N, and PMT financial registers. You can view these registers by clicking on the <u>STO</u> function key. Compound interest calculations are also affected by the settings in the <u>payment mode</u> options.

Function Key Help

To obtain context-sensitive help on a particular function key, press Shift+F1 (hold down the shift key and press F1). The mouse cursor will change to a question mark. Then click on the desired function key.

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Percent of a Number

The 🔀 key is used to calculate a percentage of a number. The result of this function depends on the equation being entered. If a single number is entered and the 🔀 key is pressed, the result is simply the number divided by 100. If two numbers are entered separated by an operator and the

key is pressed, the second number is converted to that percentage of the first number. For example, 15 + 8.1% is converted to 15 + 1.22 because 8.1% of 15 is 1.22.

Percent Difference Calculations

The $\square \&$ function is used to compute the old value, new value, or percentage difference between an old and new value. Any two of the variables must be known and the third can then be computed.

Select the value to be calculated, key in the values for the two known variables, and click on the Compute button.

Days Between Dates

Calculates the number of days between two dates using either a 360 or 365 day calendar year. Key in values for the first and second dates are using MM-DD-YYYY format unless the <u>European separators</u> separator option has been set. In this latter case dates are entered in DD-MM-YYYY format.

Bond Calculations

The bond functions calculate the price or yield to maturity of an annual or semi-annual coupon bond. Calculations are made on the a 30/360 basis using a par value of 100.

Select the option to be computed, either bond price or yield. If the price is to be computed, the yield must be known and visa-versa. Select either one or two coupons per year.

Key in values for the coupon rate, settlement date, and redemption date. Dates are entered using the MM-DD-YYYY format unless the <u>European separators</u> option has been set in which case they are entered as DD-MM-YYYY. In the case where bond price is being calculated, the accrued interest is also computed.

Just A Reminder....

When you register, you'll receive the latest commercial version of M-B-A-nalyst software which includes a *simulated tape display*. You will also receive the M-B-A-nalyst User's Guide, a complete manual containing plenty of examples.

To view/print a registration form, <u>click here</u> For our address and phone number, <u>click here</u>.

Select **<u>F</u>ile** and then **<u>Exit</u> to remove this screen.**

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Shareware offers a unique *try before you buy* approach to software marketing; a chance to really get to know the product before you purchase.

Shareware authors like myself rely on you supporting our products through registration. I hope that you will register M-B-A-nalyst if, after a short trial period, you find the program useful.

By the way, check out the **Keep On Top** feature under the **Edit** menu. This allows M-B-Analyst to remain on top of all other windows, even when its minimized.

Ric Way Author

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Discounted Cash Flow Analysis

The net present value (NPV), net future value (NFV), and internal rate of return (IRR) functions allow you to compute compound interest problems at regular intervals where the payment (positive or negative) amount is irregular. In addition, if a number of the amounts are regular, you can "group" them together. You must observe the <u>cash flow convention</u> when entering the payment amounts.

Cash flow data is entered using the <u>CFLO</u> function. An interest rate must be <u>stored</u> in the I register prior to computing any of these functions.

To compute a function, the <u>STO</u> key must be pressed followed by the function to be computed, either

<u>STO</u>,

STO, or

<u>STD</u>. The result will appear in the display and will also be saved in the appropriate financial storage register.

Interest Rate Conversions

M-B-A-nalyst can convert between a nominal interest rate and an effective interest rate using either periodic compounding or continuous compounding. Interest rate conversions are required for compound interest problems where the compounding period is different from the payment period. Both of the interest rates should be percentages. Usually, the nominal rate is the stated annual interest rate and the effective rate is the actual annual rate after compound interest has been taken into account.

To convert an interest rate, select the rate you wish to convert to, either nominal or effective and then enter the known rate you're converting from. Key in the number of compounding periods per year. For continuous compounding, key in 0 as the number of compounding periods.

Markup Calculations

This function computes cost, price, or markup percentage. Any two of the variables must be known and the third can then be computed. Select the desired option to be computed. Then key in the known values for the other two variables and click on the Compute button.

Math Functions

The following math functions are provided:



 \square returns the value of Pi, 3.14159...

LOG base 10 log function

LN natural log function

exponential function

1/x reciprocal function

x! factorial function

square root function

STO round number internally to match display

M-B-A-nalyst (Tm) Financial Calculator

Thank you for examining this shareware version of M-B-A-nalyst. M-B-A-nalyst is similar to the powerful *Texas Instruments BA-II Plus (Tm)* handheld financial calculator and is easy to learn and use.

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