Contents for Business Calculator Help

You can use the Business Calculator to perform many advanced business, financial, and statistical calculations, as well as, basic calculations. It also provides multiple memory registers and a calculator tape that you can edit and print.

To learn how to use Help, press F1.

Business/Financial Functions

To use the business/financial functions in the Business Calculator, click the following buttons or press the keyboard equivalent.

Button	**Key**	**Function**
COMP	C	Compute - Use to compute CST, SEL, MAR, MU, n, i, PV, FV, PMT, APR, and EFF.
CFt	$	Cash Flow for period t - This is used when calculating NPV and IRR. When you choose CFt, the value that is in the display is entered into the Cash Flow Box. If more than 1 consecutive period has the same cash flow, use Nt in conjunction with CFt.
Nt	#	Number of periods with the same cash flow - Use with CFt when there is more than 1 consecutive period with the same cash flow. The number in the display when you press Nt is the number of periods with the same cash flow. Then you may enter the cash flow and press CFt.
NPV	Y	Net Present Value - Calculates the net present value of the numbers in the cash flow box using the interest rate entered into i.
IRR	?	Internal Rate of Return - Calculates the internal rate of return of the numbers in the cash flow box.
n	n	Number of periods - The number in the display will be entered into the n register. If you want to compute n, enter the appropriate numbers in i, PV, FV, and PMT then press COMP n.
i	i	Interest Rate - The number in the display is entered into the i register. It should be entered as a PERCENT not a DECIMAL. If you wish to compute i, enter the appropriate numbers in n, PV, FV, and PMT then press COMP i. This calculation may take a little time.
PV	P	Present Value - The number in the display is entered into the PV register. If you wish to compute the present value, enter the appropriate values in n, i, FV, and PMT then press COMP PV.
FV	F	Future Value - The number in the display is entered into the FV register. If you wish to compute the future value, enter the appropriate values in n, i, PV, and PMT then press COMP FV.
PMT	H	Annuity Payment - The number in the display is entered into the PMT register. To use this function, the payments must be equal for all n periods. If the BGN key is not set, it is assumed that the payments come at the end of each period. To calculate the annuity payment, enter the appropriate values in n, i, PV, and FV then press COMP PMT.
g	G	Growth Rate - The number in the display is entered into the g register. This is the rate that payments are increasing for a growing annuity. It should be entered as a PERCENT, not a DECIMAL.
BGN	B	Beginning of the period - Pressing the BGN key tells the calculator that the payments occur at the beginning of the period instead of the end of the period. It is used with n, i, PV, FV, and PMT.

EFF	W	Effective Annual Rate - Converts the number entered into APR an effective annual rate using the number of compounding periods entered into n.
APR	A	Annual Percentage Rate - Converts the number entered into EFF into an annual percentage rate using the number of compounding periods entered into n.
AMRT	Z	Amortization - Numbers must be entered into n, ,i, PV, FV, and PMT. By pressing AMRT, an amortization table is displayed which can be edited, printed, saved, and copied to other applications.
P1	J	Period 1 of the Accumulation Periods - Numbers must be entered into n, i, PV, FV, and PMT. Enter the first period you are interested in and press P1.
P2	K	Period 2 of the Accumulation Periods - Numbers must be entered into n, i, PV, FV, and PMT. Enter the last period you are interested in and press P2.
SEL	S	Selling Price - The number in the display is entered into the SEL register. To calculate the selling price enter the appropriate numbers into CST, MAR, and MU then press COMP SEL. You only need either MAR or MU, not both.
MAR	M	Margin - The number in the display is entered into the MAR register. Enter as a PERCENT not a DECIMAL. To calculate the margin, enter the appropriate numbers into CST, SEL, and MU then press COMP MAR.
MU	U	Mark-up - The number in the display is entered into the MU register. Enter as a PERCENT not a DECIMAL. To calculate the mark-up enter the appropriate numbers into CST, SEL, and MAR then press COMP MU.
CST	T	Cost - The number in the display is entered into the CST register. To calculate the cost enter the appropriate numbers into SEL, MAR, and MU then press COMP CST. You only need either MAR or MU, not both.
ACC	O	Accumulated Interest and Principal - Numbers must be entered into P1/P2, n, i, PV, FV, and PMT. Press ACC to get the total principal paid from the first period entered to the second period entered into P1/P2. Press ACC again to get the total interest paid from the first period to the second period.

Memory Functions

To use the memory functions in the Business Calculator, click the following buttons or press the keyboard equivalent.

Button	Key	Description
M1	CTRL+1	Display Memory Register 1
M2	CTRL+2	Display Memory Register 2
M3	CTRL+3	Display Memory Register 3
M4	CTRL+4	Display Memory Register 4
M5	CTRL+5	Display Memory Register 5
STO	CTRL+6	Store display in chosen memory register, replaces previous contents
M+	CTRL+7	Adds display to contents of chosen memory register

Standard Calculator Functions

To use the standard calculator functions in the Business Calculator, click the following buttons or press the keyboard equivalent.

Button	Key	Description
CA	ESC	Clear All - clears the display plus all registers except the memory registers
C·CE	Delete	Clear - clears the display or the last entry - does not clear any registers. If you press this button twice, you will clear all operations since the last equal.
BACK	Backspace or left arrow	Backspace - deletes the last digit of the displayed number
e^x	X	Exponential - raises e to the power in the display
ln	L	Logarithm - calculates the natural log of the displayed number
n!	!	Factorial - calculates the factorial of the displayed number
%	%	Percent - converts the displayed number to a percent
y^x	^	Power - raises the number in the display to the power of the next number entered
sqrt	@	Square Root - calculates the square root of the displayed number
1/x	V	Inverse - calculates the inverse of the displayed number
x^2	Q	Square - calculates the square of the displayed number
/	/	Divide
x	*	Multiply
-	-	Subtract
.	.	Decimal - inserts a decimal point in the displayed number
+/-	CTRL+9	Change sign - changes the sign of the displayed number
+	+	Add
=	= or Enter	Equals - performs the operation between the previous two numbers

Statistical Functions

To use the statistical functions in the Business Calculator, click the following buttons or press the keyboard equivalent.

Button	Key	Description
R	CTRL+R	Correlation coefficient - This is a regression parameter that may take on values between -1 and 1. A value close to 1 indicates a highly positive correlation, a value close to -1 indicates a highly negative correlation, and a value close to 0 indicates very little correlation between the two variables. This key is only valid in two-variable statistics.
a	CTRL+a	Intercept - This gives the y-intercept in the regression line estimated from the data. The line is of the form y=a+bx. This key is only valid in two-variable statistics.
b	CTRL+b	Slope - This gives the slope of the regression line estimated from the data. The line is of the form y=a+bx. This key is only valid in two-variable statistics.
X'	CTRL+X	X - This calculates the predicted value of the independent (x) variable for a given dependent (y) variable using the regression results. The value in the display is used as the dependent (y) variable. This key is only valid in two-variable statistics.
Y'	CTRL+Y	Y - This calculates the predicted value of the dependent (y) variable for a given independent (x) variable using the regression results. The value in the display is used as the independent (x) variable. This key is only valid in two-variable statistics.
STAT	CTRL+S	Statistics Box - enables the statistics functions.
Sum-x	CTRL+J	Sum of Xi's.
Sum-y	CTRL+K	Sum of Yi's - This key is only valid in two-variable statistics.
Sum-xy	CTRL+L	Sum of products of Xi and Yi - This is used in calculating the regression parameters (a and b). This key is only valid in two-variable statistics.
Sx	CTRL+D	Sample Standard Deviation of X - This gives the standard deviation using a population parameter of n-1. Square the result to get the variance.
Sy	CTRL+E	Sample Standard Deviation of Y - This gives the standard deviation using a population parameter of n-1. Square the result to get the variance. This key is only valid in two-variable statistics.
pSx	CTRL+P	Population Standard Deviation of X - This gives the standard deviation using a population parameter of n. Square the result to get the variance.
pSy	CTRL+Q	Population Standard Deviation of Y - This gives the standard deviation using a population parameter of n. Square the result to get the variance. This key is only valid in two-variable statistics.
Mx	CTRL+N	Mean of X - sample average.
My	CTRL+M	Mean of Y - sample average. This key is only valid in two-variable statistics.
(x,y)	,	Enters the independent (x) value when entering paired data. This key is only

		valid in two-variable statistics.
DATA	d	Enters the sample point when entering non-paired data or the dependent (y) value when entering paired data.

Application Control Menu Commands

To display the Application Control Menu, do one of the following:

- Click the Application Control Menu box
- Press ALT+Space bar

Restore - Returns the active window to its previous size.

Move - Displays a four-headed arrow you can use with the direction keys to reposition an application window.

Minimize - Shrinks an application window to an icon.

Close - Closes an application window.

Switch To - Switch to another open application.

Edit Menu Commands

Copy	Copies a value onto clipboard
Paste	Pastes a value from Clipboard to Business Calculator's display or performs a calculator function.
Exit -	Quits Business Calculator. Same as Application Control Close

Copy

Copies a value onto clipboard.

Use this command when you want to copy a value and paste it into another application.

Related Topics

Using Business Calculator with Clipboard

Paste

Pastes a value from clipboard to Business Calculator's display or performs a Calculator function.

Business Calculator interprets each character in clipboard as if the character were entered on the keyboard. When you paste from clipboard, Business Calculator interprets some characters as key sequences.

Related Topics

Using Business Calculator with Clipboard

View Menu Commands

Always-On-Top

Choosing this option causes the Business Calculator to always be the top most window. The program stays on top even when minimized. This allows you to more easily use the Business Calculator with other applications. When Always-On-Top is enabled, a check mark will appear next to the menu item.

Standard Keyboard

Choosing this option causes the Business Calculator to display the standard keyboard. The standard keyboard is made up of the right side of the business/stat keyboard. Thus it occupies only one half the screen space as does the business/stat keyboard. When the Standard Keyboard is enabled, a check mark will appear next to the menu item.

Business/Stat Keyboard

Choosing this option causes the Business Calculator to display the business/stat keyboard. The business/stat keyboard contains all the keys of the standard keyboard plus the business and statistics keys. When the Business/Stat Keyboard is enabled, a check mark will appear next to the menu item.

Decimal Places

The Business Calculator allows you to set the number of decimal places that are displayed. Choose View:Decimal Places from the menu bar. Select the number of decimal places you wish to display and press OK. If automatic is chosen, the Business Calculator will display the most accurate number of decimal places. Automatic is the default setting.

Memory Registers

Choosing this option will bring up a dialog box which will list the contents of all five memory registers. Pressing Alt + M will also bring up the dialog box without going through the menu. Pressing Close will remove the box. Pressing Clear All within the dialog box will clear the memory registers.

Financial Registers

Choosing this option will bring up a dialog box which will list the contents of the following nine financial registers: n, i, PV, FV, PMT, EFF, APR, period 1, and period 2 (P1 and P2). Pressing Alt + I will also bring up the dialog box without going through the menu. Pressing Close will remove the dialog box. Pressing Clear All within the dialog box will clear the displayed registers.

Retail Registers

Choosing this option will bring up a dialog box which will list the contents of the following four retail registers: SEL, MAR, MU, and CST. Pressing Alt + A will also bring up the dialog box without going through the menu. Pressing Close will remove the dialog box. Pressing Clear All within the dialog box will clear the displayed registers.

Calculator Tape Choosing this option will bring up a window which is similar to an adding machine paper tape. It will show all operations from the time it is opened to the time it is closed. A copy of the tape may be printed to a printer or portions can be copied to another windows document using cut and paste. You can also edit the tape and the usual user interface keys for edit control are active. One important key sequence to remember is CTRL-END. This sequence returns the cursor to the end of the tape. If you have been editing the tape and you fail to return the cursor to the end of the tape, then the next operation will start where you have been editing instead of at the end. The Always-On-Top view option is also available (see above description).

NOTE:
If you exit the Business Calculator with any of the View windows still displayed, those View windows will automatically be displayed the next time you start the Business Calculator. The Always-On-Top view option and the keyboard view option are also saved between sessions.

Time Value of Money Calculations

Calculating Future Values

Example
Suppose you receive $1000 on your 16th birthday. If you deposit the money in a savings account which earns 10% compounded annually, how much will you have on your 25th birthday?

Determining the variables

n = 25 - 16 = 9 Since the interest is compounded annually, we just use the number of years.
i = 10
PV = $1000
PMT = $0

Entering the information and calculating FV

1. Press CA to clear the registers.
2. Enter 9, then press n.
3. Enter 10, then press i.
4. Enter 1000, then press PV.
5. Since the registers are set to 0 when they are cleared, we do not need to do anything with payment. If you wish, however, you may enter 0, then press PMT.
6. Press COMP, then press FV.

Answer: 2357.947691

Note: All the calculations dealing with n, i, PV, and FV are simple growth problems that can be applied to many situations other than money.

Example

In the fall semester of 1990, the University has an enrollment of 25,000. If there are 2 semesters per year and enrollment is expected to increase by 2% per semester, what will enrollment be in the fall semester of 1992 (4 semesters later)?

Determining the variables

n = 4
i = 2
PV = 25,000
PMT = 0

Entering the information and calculating FV

1. Press CA.
2. Enter 4, then press n.
3. Enter 2, then press i.
4. Enter 25000, then press PV.
5. Press COMP, then press FV.

Answer: 27,060.804

Compounding Periods Other Than Annual

When compounding occurs more often than annually, we must divide the annual percentage rate (APR) by the number of compounding periods per year to get i. We must also multiply the number of years by the number of compounding periods to get n. The rate quoted by banks, finance companies, etc.. must be the APR, by law.

Example

Given a quoted rate of 10% and the following compounding periods, what should you use for i?

Compounding Period	i
Semiannually	10/2 = 5
Quarterly	10/4 = 2.5
Monthly	10/12 = .8333333333333
Weekly	10/52 = .1923076923077
Daily	10/365 = .02739726027397

Example

You deposit $10,000 in a savings account for your daughter when she is born. If the savings account pays 5.5% compounded daily, how much will she have for college in 18 years?

Determining the variables

n = 18 * 365 = 6570
i = 5.5/365 = .01506849315068
PV = 10,000
PMT = 0

Entering the information and calculating FV

1. Press CA.
2. Enter 18 * 365 = , then press n.
3. Enter 5.5 / 365 = , then press i.
4. Enter 10000, then press PV.
5. Press COMP, then press FV.

Answer: 26,910.337634

Calculating FV with payments

Example

You want to buy a house in 3 years, so you want to begin saving for the down payment today. You plan to deposit $100 a month, beginning at the end of this month, in a savings account which earns 8% compounded monthly. How much will you have for the down payment in 3 years?

Determining the variables

n = 3 * 12 = 36
i = 8 / 12 = .6666666666667
PV = 0
PMT = 100

Entering the information and calculating FV

1. Press CA.
2. Enter 36, then press n.
3. Enter 8 / 12 = , then press i.
4. Enter 100, then press PMT.
5. Remember that PV is already 0 since we cleared the registers.
6. Press COMP, then press FV.

Answer: 4053.55577431

Example

Suppose you deposit $1000 into a mutual fund today and will deposit $500 a year, beginning 1 year from today, for 10 years. If the fund earns 9% per year, how much will you have in 10 years?

Determining the variables

n = 10
i = 9
PV = 1000
PMT = 500

Entering the information and calculating FV

1. Press CA.
2. Enter 10, then press n.
3. Enter 9, then press i.
4. Enter 1000, then press PV.
5. Enter 500, then press PMT.
6. Press COMP, then press FV.

Answer: 9963.828533437

Example

Suppose a university wants to set up a scholarship fund. They invest $100,000 at 12% compounded annually. If they withdraw $10,000 a year beginning 1 year from today, how much will be in the account in 10 years?

Determining the variables

n = 10
i = 12
PV = 100,000
PMT = -10,000 Since you are withdrawing the payments, you need to enter the payment with a negative sign.

Entering the information and calculating FV

1. Press CA.
2. Enter 10, then press n.
3. Enter 12, then press i.
4. Enter 100000, then press PV.
5. Enter -10000, then press PMT
6. Press COMP, then press FV.

Answer: 130597.4701391

Annuity Dues

Example

Suppose you are saving money for a new car. If you deposit $200 a month, beginning today, in an account which pays 12% compounded monthly, how much will you have in one year?

Determining the variables

n = 1 * 12 = 12
i = 12/12 = 1
PV = 0
PMT = 200

Entering the information and calculating FV

1. Press CA.
2. Press BGN. This tells the calculator that the payments come at the beginning of the period.
3. Enter 12, then press n.
4. Enter 1, then press i.
5. Enter 200, then press PMT.
6. Press COMP, then press FV.

Answer: 2561.865608666

7. Press BGN. This changes the calculator back to a normal payment mode.

Calculating Present Value

Example

Suppose you know you are going to receive $5000 in 5 years. If the going interest rate is 6% compounded annually, what is the $5000 worth today?

Determining the variables

n = 5
i = 6
FV = 5000
PMT = 0

Entering the information and calculating PV

1. Press CA to clear the registers.
2. Enter 5, then press n.
3. Enter 6, then press i.
4. Enter 5000, then press FV.
5. Since the registers are set to 0 when they are cleared, we do not need to do anything with payment. If you wish, however, you may enter 0, then press PMT.
6. Press COMP, then press PV.

Answer: 3736.29086433

Compounding Periods Other Than Annual

When compounding occurs more often than annually, we must divide the annual percentage rate (APR) by the number of compounding periods per year to get i. We must also multiply the number of years by the number of compounding periods to get n. The rate quoted by banks, finance companies, etc... must be the APR, by law.

Example

Given a quoted rate of 10% and the following compounding periods, what should you use for i?

Compounding Period	i
Semiannually	10/2 = 5
Quarterly	10/4 = 2.5
Monthly	10/12 = .8333333333333
Weekly	10/52 = .1923076923077
Daily	10/365 = .02739726027397

Example

You need $20,000 in five years for a down payment on a house. If a mutual fund earns 11% compounded quarterly, how much do you need to deposit today?

Determining the variables

n = 5 * 4 = 20
i = 11 / 4 = 2.75
FV = 20,000
PMT = 0

Entering the information and calculating PV

1. Press CA.
2. Enter 20, then press n.
3. Enter 11 / 4 = , then press i.
4. Enter 20000, then press FV.
5. Press COMP, then press PV.

Answer: 11625.01132642

Calculating PV with payments

Example

You have just won the lottery. The jackpot is $10 million which you will receive in yearly installments of $500,000 per year for 20 years, beginning 1 year from today. The interest rate is 9% compounded annually. How much is the lottery actually worth today?

Determining the variables

n = 20
i = 9
FV = 0
PMT = 500,000

Entering the information and calculating PV

1. Press CA.
2. Enter 20, then press n.
3. Enter 9, then press i.
4. Enter 500000, then press PMT.
5. Press COMP, then press PV.

Answer: 4564272.834543

Note: the following is a common problem in investments and corporate finance.

Example

You want to purchase a corporate bond with a $1000 face value. It pays an annual coupon of $100 and matures in 15 years. The next coupon will be paid in 1 year. The yield to maturity on similar bonds is 12%. What is a fair price for this bond?

Determining the variables

n = 15
i = 12
FV = 1000
PMT = 100

Entering the information and calculating PV

1. Press CA.
2. Enter 15, then press n.
3. Enter 12, then press i.
4. Enter 1000, then press FV.
5. Enter 100, then press PMT.
6. Press COMP, then press PV.

Answer: 863.7827102107

Annuity Dues

Example

You are going to receive $300 a month for the next 3 years. The first payment will be received today. The going interest rate is 6% compounded monthly. What is the value of this annuity?

Determining the variables

n = 3 * 12 = 36
i = 6 / 12 = .5
FV = 0
PMT = 300

Entering the information and calculating PV

1. Press CA.
2. Press BGN. This tells the calculator that the payments come at the beginning of the period.
3. Enter 36, then press n.
4. Enter .5, then press i.
5. Enter 300, then press PMT.
6. Press COMP, then press PV.

Answer: 9910.611396138

7. Press BGN. This changes the calculator back to a normal payment mode.

The number of periods. The number of periods, the interest rate, and number of payments must agree.

The interest rate per period.

The present value of future cash flows based on a given rate of interest.

Equal cash flows which occur at the end of each period.

The value of cash flows at some point in the future.

This tells how often interest is applied. With compounding, you receive interest on interest which has been previously paid. This means the more compounding periods, the more you are actually earning.

An annuity due is when you have a series of equal payments with the payments coming at the beginning of the period instead of the end. An ordinary annuity has payments coming at the end of the period.

Calculating the Number of Periods

Example

If you deposit $10,000 in a mutual fund earning 13% compounded annually, how long will it be before you double your money?

Determining the variables

i = 13
PV = 10,000
FV = 10,000 * 2 = 20,000
PMT = 0

Entering the information and calculating n

1. Press CA to clear all the registers.
2. Enter 13, then press i.
3. Enter 10000, then press PV.
4. Enter 20000, then press FV.
5. Since the registers are set to 0 when they are cleared, we do not have to do anything with payment. You may, however, enter 0 , then press PMT.
6. Press COMP, then press n.

Answer: 5.67141716878

Compounding periods other than annual

When compounding occurs more often than annually, we must divide the annual percentage rate (APR) by the number of compounding periods per year to get i. We must also multiply the number of years by the number of compounding periods to get n. The rate quoted by banks, finance companies, etc.... must be the APR, by law.

Example

Given a quoted rate of 10% and the following compounding periods, what should you use for i?

Compounding Period	i
Semiannually	10/2 = 5
Quarterly	10/4 = 2.5
Monthly	10/12 = .8333333333333
Weekly	10/52 = .1923076923077
Daily	10/365 = .02739726027397

Example

You need $25,000 for a down-payment on a house. If you have $15,000 today and can earn 8% compounded daily, how long will it take to get the $25,000?

Determining the variables

i = 8 / 365 = .02191780821918
PV = 15,000
FV = 25,000
PMT = 0

Entering the information and calculating n

1. Press CA.
2. Enter 8 / 365 = , then press i.
3. Enter 15000, then press PV.
4. Enter 25000, then press FV.
5. Press COMP, then press n.

Answer: 2330.897311914

6. Remember this is in days, so to convert to years we take 2330.897311914 / 365 = 6.386020032642.

Calculating n with payments

Example

A corporate bond with a face value of 1000, an annual coupon of $110, and a yield to maturity of 10% sells for $1068.14. How many years until this bond matures?

Determining the variables

i = 10
PV = 1068.14
FV = 1000
PMT = 110

Entering the information and calculating n

1. Press CA.
2. Enter 10, then press i.
3. Enter 1068.14, then press PV.
4. Enter 1000, then press FV.
5. Enter 110, then press PMT.
6. Press COMP, then press n.

Answer: 12.00101483236

Calculating the Interest Rate

Example

Suppose 6 years ago you deposited $500 in an account which compounds interest on an annual basis. If there is $1000 in the account today, what interest rate have you been earning?

Determining the variables

n = 6
PV = 500
FV = 1000
PMT = 0

Entering the information and calculating i

1. Press CA to clear all the registers.
2. Enter 6, then press n.
3. Enter 500, then press PV.
4. Enter 1000, then press FV.
5. Since we cleared the registers, PMT is already 0. You may, however, enter 0, then press PMT.
6. Press COMP, then press i.

Answer: 12.24520483094

Compounding periods other than annual

When compounding occurs more often than annually, we must divide the annual percentage rate (APR) by the number of compounding periods per year to get i. We must also multiply the number of years by the number of compounding periods to get n. The rate quoted by banks, finance companies, etc... must be the APR, by law.

Example

Five years ago you deposited $100 in a savings account. You now have $149.14 in the account. If interest is compounded weekly, what is the annual percentage rate (APR)?

Determining the variables

n = 5 * 52 = 260
PV = 100
FV = 149.14
PMT = 0

Entering the information and calculating i

1. Press CA.
2. Enter 260, then press n.

3. Enter 100, then press PV.
4. Enter 149.14, then press FV.
5. Press COMP, then press i.

Answer: .1538548800266

6. To convert to an APR you need to multiply by 52. i.e. .1538548800266 * 52 = 8.000453761383

Calculating i with payments

Example

A corporate bond has the following characteristics: $1000 face value; $60 semiannual coupon; 10 years to maturity; $1059.75 market price. If the next coupon payment is 6 months from today, what is the yield to maturity?

Determining the variables

n = 10 * 2 = 20
PV = 1059.75
FV = 1000
PMT = 60

Entering the information and calculating i

1. Press CA.
2. Enter 20, then press n.
3. Enter 1059.75, then press PV.
4. Enter 1000, then press FV.
5. Enter 60, then press PMT.
6. Press COMP, then press i.

Answer: 5.500084216143

7. To get the yield to maturity we need to multiply by 2. i.e. 5.500084216143 * 2 = 11.00016843229

Calculating Payments

When calculating payments, n and i must match the frequency of the payments. i.e. If payments occur monthly, then n should be the number of months and i should be the interest rate per month.

Example

You are going to borrow $75,000 to buy a house. If you take out a 30-year loan with an annual percentage rate (APR) of 9.5% and the first payment comes in 1 month, what is your monthly payment?

Determining the variables

n = 30 * 12 = 360
i = 9.5 / 12 = .7916666666667
PV = 75,000
FV = 0

Entering the information and calculating PMT

1. Press CA to clear all the registers.
2. Enter 360, then press n.
3. Enter 9.5 / 12 = , then press i.
4. Enter 75000, then press PV.
5. Since the registers have been cleared, FV is already 0. You may, however, enter 0, then press FV.
6. Press COMP, then press PMT.

Answer: 630.6406553841

Example

If you need $25,000 in 18 years for your child's education, how much do you need to save per week if the interest rate is 10% compounded weekly. You will make the first deposit in 1 week.

Determining the variables

n = 18 * 52 = 936
i = 10 / 52 = .1923076923077
PV = 0
FV = 25,000

Entering the information and calculating PMT

1. Press CA.
2. Enter 936, then press n.
3. Enter 10 / 52 = , then press i.
4. Enter 25000, then press FV.
5. Press COMP, then press PMT.

Answer: 9.540587633684

Annuity Dues

Example

Suppose you want to start saving for a new Mercedes. You estimate the cost of the car to be $100,000 in 3 years. If you want to make monthly deposits, starting today, to an account which pays 15% compounded monthly, what should your payments be?

Determining the variables

n = 3 * 12 = 36
i = 15 / 12 = 1.25
PV = 0
FV = 100,000

Entering the information and calculating PMT

1. Press CA.
2. Press BGN. This tells the calculator that payments occur at the beginning of the period.
3. Enter 36, then press n.
4. Enter 1.25, then press i.
5. Enter 100000, then press FV.
6. Press COMP, then press PMT.

Answer: 2189.168247328

7. Press BGN. This returns the calculator to the normal payment mode.

Net Present Value Analysis

By definition, net present value is the present value of all future cash flow minus any initial investment. If you have a lump sum cash flow or an annuity, you can calculate the present value as discussed in Time Value of Money Calculations and then subtract the initial investment.

Uneven Cash Flows

When the future cash flows are not the same each period you can use the CFt key to enter each period's cash flow. One thing to remember is you MUST begin with a cash flow at the beginning of the project, even if it is 0, and you can't skip any periods.

Example

You are looking at a project which will cost $100,000 and will pay $20,000 at the end of the first year, $40,000 at the end of the second year, $80,000 at the end of the third year, and $10,000 at the end of the fifth year. (No money will be received at the end of the fourth year.) If your cost of capital is 12%, what is the net present value?

Determining the variables

CF(0) = -100,000 Cash outflows are always negative.
CF(1) = 20,000
CF(2) = 40,000
CF(3) = 80,000
CF(4) = 0
CF(5) = 10,000
i = 12

Entering the information and calculating NPV

1. Press CA to clear all the registers or Clear All if the cash flow dialog box is open.
2. Enter -100000, then press CFt. This will bring up the cash flow dialog box which allows you to view the cash flows that have been entered.
3. Enter 20000, then press CFt.
4. Enter 40000, then press CFt.
5. Enter 80000, then press CFt.
6. Enter 0, then press CFt.
7. Enter 10000, then press CFt.
8. Enter 12, then press i.
9. Press NPV.

Answer: 12361.58634144

Consecutive periods with the same cash flows

Example

Your firm is looking at a project which will cost $500,000 up front, will pay $75,000 at the end of

the first 5 years, pay $50,000 at the end of the next 5 years, and will cost $20,000 to be removed at the end of year 10. If your cost of capital is 15%, what is the net present value?

Determining the variables

CF(0) = -500,000
CF(1)-CF(5) = 75,000 note that there are five of these
CF(6)-CF(9) = 50,000 note that there are four of these
CF(10) = 50,000 - 20,000 = 30,000

Entering the information and calculating NPV

1. Press CA or Clear All if the cash flow dialog box is open.
2. Enter -500000, then press CFt.
3. Enter 5, then press Nt. This tells the calculator that the next five periods have the same cash flow.
4. Enter 75000, then press CFt.
5. Enter 4, then press Nt.
6. Enter 50000, then press CFt.
7. Enter 30000, then press CFt.
8. Enter 15, then press i.
9. Press NPV.

Answer: -170201.3853794

Calculating present value with uneven cash flows

You can also use CFt, Nt, and NPV to calculate the present value of uneven cash flows.

Example

You are going to receive $1000 bonus at the end of this monthly, $500 bonus at the end of next month, and $250 bonus at the end of the month after that. If the interest rate is 12% compounded monthly, what is the present value of your bonuses?

Determining the variables

CF(0) = 0
CF(1) = 1000
CF(2) = 500
CF(3) = 250

Entering the information and calculating PV

1. Press CA or Clear All if the cash flow dialog box is open.
2. Enter 0, then press CFt.
3. Enter 1000, then press CFt
4. Enter 500, then press CFt.
5. Enter 250, then press CFt.
6. Enter 1, then press i.
7. Press NPV. Since there is no initial cash outflow, the PV = NPV. If there had been an

initial cash outflow you would add the amount to the NPV to get the PV.

Answer: 1722.894571586

Related Topics

Entering Uneven Cash Flows
Internal Rate of Return Analysis
Time Value of Money Calculations

Internal Rate of Return Analysis

The internal rate of return of a stream of cash flows is the rate return which gives a net present value of 0.

Example

Your company is considering a project which has an initial outlay of $50,000. It will pay $25,000 in 1 year, $20,000 in 2 years, and $15,000 in 3 years. What is the internal rate of return?

Determining the variables

CF(0) = -50,000 cash outflows are always negative
CF(1) = 25,000
CF(2) = 20,000
CF(3) = 15,000

Entering the information and calculating IRR

1. Press CA to clear all the registers or Clear All if the Cash Flow dialog box is already open.
2. Enter -50000, then press CFt. This will bring up the cash flow dialog box which allows you to see the cash flows which have been entered.
3. Enter 25000, then press CFt.
4. Enter 20000, then press CFt.
5. Enter 15000, then press CFt.
6. Press IRR.

Answer: 10.65168082714

Example

A possible investment has the following cash flows: $75,000 initial outlay and $40,000 in years 1 through 3. What is the internal rate of return?

Determining the variables

CF(0) = -75,000
CF(1) - CF(3) = 40,000 note there are three cash flows

Entering the information and calculating IRR

1. Press CA or Clear All if the cash flow dialog box is still open.
2. Enter -75000, the press CFt.
3. Enter 3, then press Nt. This tells the calculator that the next three cash flows are the same.
4. Enter 40000, then press CFt.
5. Press IRR.

Answer: 27.75606691837

Note: An internal rate of return may not always exist or there may be more than one. This is particularly true if a cash outflow occurs at the beginning of the project and again at the end of the project. For this reason, some care should be used with internal rate of return analysis.

Related Topics

Entering Uneven Cash Flows
Net Present Value Analysis

The cost of capital is the interest paid on financing. It should be a function of the cost of debt, the cost of equity, and the risk of the project.

Entering Uneven Cash Flows

The uneven cash flow keys are used in conjunction with Net Present Value Analysis and Internal Rate of Return Analysis You always need to begin with the first period of the project. Generally this will be the initial outlay. If there is not cash flow in the first period you need to enter 0. You also need to make sure you enter a cash flow for every period, even if it is 0.

Example

Enter the following cash flows

CF(0) = -50,000 cash outflows are negative
CF(1) = 25,000
CF(2) = 0
CF(3) = 30,000

Entering the information

1. Press CA to clear all the registers or Clear All if the cash flow dialog box is open.
2. Enter -50000, then press CFt. This will bring up the cash flow dialog box.
3. Enter 25000, then press CFt.
4. Enter 0, then press CFt.
5. Enter 30000, then press CFt.

If you have consecutive cash flows which are equal, you don't have to enter each cash flow separately.

Example

Enter the following cash flows.

CF(0) = 0
CF(1) - CF(5) = 20,000 note there are 5 cash flows
CF(6) = 15,000

Entering the information

1. Press CA or Clear All if the cash flow dialog box is open.
2. Enter 0, then press CFt.
3. Enter 5, then press Nt. This tells the calculator that the next 5 cash flows are the same.
4. Enter 20000, then press CFt. Note that CF(1) through CF(5) show up in the dialog box with a value of 20000.
5. Enter 15000, then press CFt.

In the dialog box there are four buttons which can be used to edit the cash flows.

Button	Key	Function
Return	R	Switch back to the main calculator.

Load	L	Enter the currently selected cash flow into the Business Calculator's display.
Delete	D	Delete the currently selected cash flow from the box.
Clear All	C	Delete all the cash flows from the box. This must be done before a new set of cash flows can be entered.

Related Topics

Net Present Value Analysis
Internal Rate of Return Analysis

Using Business Calculator with Clipboard

The Business Calculator can be used to supply calculated results to any application which makes use of the Clipboard.

To copy the number in Business Calculator's display to the Clipboard: Choose Copy from the Edit Menu.

To paste a number from the Clipboard to Business Calculator's display: Choose Paste from the Edit Menu.

Most characters on the Clipboard will be interpreted as if they were entered on the keyboard. The following is a description of some special characters.

Character	**Pasted Text Meaning**
:	When placed before a character Business Calculator interprets the character as part of a control key sequence. For instance, :E is the same as CTRL + E.
{	Clears the display plus all the registers except the memory registers. It is the equivalent of CA or the ESC key.
}	Clears the display or the last entry. It is equivalent to the C-CE or the Delete key. If two } occur in a row, it will clear all operations since the last equal.

Calculating Effective Annual Rates and APR's

An annual percentage rate (APR) is defined as the period interest rate multiplied by the number of compounding periods. Therefore, if interest is compounded monthly the APR is the monthly rate times 12. This is the rate that must be quoted by law.

An effective annual rate (EAR) takes into account the interest paid on interest. This implies that if interest is compounded more than once a year, then the EAR will be greater than the APR.

Converting from an APR to an EAR

Example

Suppose you are given a loan with an APR of 13% compounded monthly. What interest rate are you effectively paying per year?

Entering the information and calculating APR

1. Press CA to clear all the registers.
2. Enter 12, then press n. This tells the calculator how many compounding periods to use.
3. Enter 13, then press APR.
4. Press COMP, then press EFF.

Answer: 13.80324816139

Converting from EAR to APR

Example

You are told you are effectively earning 10% on your money and that compounding occurs daily. What is the APR?

Entering the information and calculating APR

1. Press CA.
2. Enter 365, then press n.
3. Enter 10, then press EFF.
4. Press APR.

Answer: 9.532262476476

Note if the compounding period is one year, the EAR and the APR will be equal.

Accumulated Interest and Principal Calculations

With Business Calculator it is very easy to calculate how much interest and how much principal is paid during a given set of payments on a loan. First you need to enter the appropriate information into n, i, PV, FV, and PMT. Then you enter the beginning period and the ending period for the set of payments you are interested in. Finally, you use the ACC key to bring up the accumulated principal and accumulated interest.

Example

You have a home mortgage with the following characteristics: Original loan amount = $75,000; Interest rate = 10% compounded monthly; 30-year fixed rate. You are starting on your fifth year of payments and you wish to know what your total interest and principal payments will be this year.

Determining the variables

PV = 75,000
FV = 0
n = 30 * 12 = 360
i = 10 / 12 = .8333333333333
PMT = this will be computed
P1 = 4 * 12 + 1 = 49 This is the first payment in year 5. If the calculations for P1 and P2 don't make sense to you, write out what payments occur in each year beginning with year 1.
P2 = 5 * 12 = 60

Entering the information and calculating accumulated interest and principal

1. Press CA to clear all the registers.
2. Enter 75000, then press PV.
3. Since we cleared the registers, FV is already 0.
4. Enter 360, then press n.
5. Enter 10 / 12 = , then press i.
6. Press COMP, then press PMT. Now all the information is available in these registers.
7. Enter 49, then press P1/P2.
8. Enter 60, then press P1/P2.
9 Press ACC.

Answer: 620.925026914

10. Notice that SUM-PRN appears in the box next to the display. This tells us that the number in the display is the sum of the principal payments.
11. Press ACC again.

Answer: 7277.219103885

12. Notice that SUM-INT appears in the box next to the display. This tells us that the number in the display is the total interest paid during this set of periods.

Related Topics

- Loan Amortization Calculations
- Time Value of Money Calculations

Loan Amortization Calculations

The AMRT in conjunction with n, i, PV, FV, and PMT make it very easy to set up an amortization schedule.

Example
Your car loan has the following characteristics: Original loan amount = $20,000; Interest rate = 11% compounded monthly; 4 year fixed rate. What is the amortization table for this loan?

Determining the variables

PV = 20,000
FV = 0
n = 4 * 12 = 48
i = 11 / 12 = .9166666666667
PMT = will be computed

Entering the information and calculating the amortization table

1. Press CA to clear all the registers.
2. Enter 20000, then press PV.
3. Since we cleared the registers, FV is already 0.
4. Enter 48, then press n.
5. Enter 11 / 12 = , then press i.
6. Press COMP, then press PMT. Now all the information is available in these registers.
7. Press AMRT. The amortization table appears in a window.

The Business Calculator uses the Windows' Notepad program to display the amortization table. While in Notepad, you are able to edit the table by clicking the mouse anywhere in the table. Thus you are able to add an appropriate title or possibly display payment dates.

From within Notepad, the amortization table can be printed to the default printer, saved to a file, or selected areas of the table may be copied to the clipboard for pasting into other applications.

The amortization will display the interest rate per period and an APR with monthly compounding if the number of periods is divisible by 12. Otherwise, it will just give the period rate and the user needs to provide the APR in the table. The table also tells you whether you are working with an ordinary annuity or an annuity due.

An amortization table may also be displayed for when you are depositing money towards a desired future value, for example solving for a retirement fund.

Related Topics
Accumulated Interest and Principal Calculations
Time Value of Money Calculations

Cost, Selling Price, Margin, and Mark-up

This can be useful in determining the selling price, margin, mark -up, or cost, particularly in retail.

Determining the selling price

Example

You want to know what the selling price of a T-shirt should be if the cost is $6 and the usual mark-up is 110%.

Entering the information and calculating selling price

1. Press CA to clear all the registers.
2. Enter 6, then press CST.
3. Enter 110, then press MU. Note MU (and MAR) are always entered as a percent.
4. Press COMP, then press SEL.

Answer: 12.6

Example

Suppose you generally have a margin of 40%. If the cost of a pair of sunglasses is $24, what should the selling price be?

Entering the information and calculating selling price

1. Press CA.
2. Enter 40, then press MAR.
3. Enter 24, then press CST.
4. Press COMP, then press SEL.

Answer: 40

Determining Margin

Example

Suppose you sell a brass picture frame for $14.40 and it cost you $6. What is your margin?

Entering the information and calculating margin

1. Press CA.
2. Enter 14.4, then press SEL.
3. Enter 6, then press CST.
4. Press COMP, then press MAR.

Answer: 58.33333333333

Determining mark-up

Example

Suppose you sell a crystal vase for $24 and it cost you $10. What is your mark-up?

Entering the information and calculating mark-up

1. Press CA.
2. Enter 24, then press SEL.
3. Enter 10, then press CST.
4. Press COMP, then press MU.

Answer: 140

Determining cost

Example

You are looking at a wicker basket which sells for $12. If you know that the store uses a mark-up on wicker of 140%, what was their cost?

Entering the information and calculating cost

1. Press CA.
2. Enter 12, then press SEL.
3. Enter 140, then press MU.
4. Press COMP, then press CST.

Answer: 5

Example

You know that a car dealer prices his cars with a margin of 15%. If the sticker price is $12,500, what is his cost?

Entering the information and calculating cost

1. Press CA.
2. Enter 15, then press MAR.
3. Enter 12500, then press SEL.
4. Press COMP, then press CST.

Answer: 10625

Margin is the percent of the selling price that is "profit."

Mark-up determines how much the selling price will be above the cost. i.e. If mark-up is 100%, then the selling price will be twice as much as the cost.

Working with Memory Registers

The Business Calculator provides you with five memory registers where you can store a number for use in the future. To store a number in a memory register first press STO and then press the button for the memory register you want. For example, if you want to store the number in memory register 1, you would press STO M1. The number in the display will replace the number currently in the register.

You can add the number in the display to a number in one of the registers. This is done by first pressing M+ and then pressing the appropriate memory register.

To retrieve a number from a memory register, just press the memory register button. For example, if you want to use the number in memory register 1, just press M1.

Performing Calculations

You will find the Business Calculator easy to use. With a mouse you just point and press the mouse button on the calculator buttons. The Business Calculator can also be used without a mouse by using the keyboard equivalents. For a list of the keyboard equivalents see Keyboard. If you wish to use the numeric keypad to enter numbers and operators make sure that Num Lock is turned on.

To enter calculations, do the following:

1. Enter the calculation's first number. The display will show the number as you enter it. If you need to change the number use BACK to erase the last few digits, one at a time, or use C-CE to clear the whole number.
2. Enter the calculation's first operator.
3. Enter the next number.
4. Continue entering the numbers and operators, then press =. The answer will be displayed.

The Business Calculator does know the order of operations. This means it will multiply and divide before it will add and subtract. It will also do the square root, inverse, percent, log, power, factorial, exponential, and squared before it will multiply or divide. This is sometimes important to remember when entering your calculations.

Advanced Calculator Functions

The Business Calculator has many advanced functions besides its business and statistical functions. They are not difficult to use, however, examples are presented below for each advanced function.

Square Root

What is the square root of 10?

Enter 10, then press sqrt. The display should show 3.162277660168.

Percent

What is 15 as a percent?

Enter 15, then press %. The display should show 0.15.

Inverse

What is the inverse of 12?

Enter 12, then press 1/x. The display should show .08333333333333

Exponential

What is exp(.75)?

Enter .75, then press e^x. The display should show 2.117000016613.

Natural Logarithm

What is the natural log of 5?

Enter 5, then press ln. The display should show 1.609437912434.

Factorial

What is 6 factorial?

Enter 6, then press n!. The display should show 720.

Power

What is 6 raised to the 7 power?

Enter 6, press y^x, enter 7, then press =. The display should show 279936.

Squared

What is 24 squared?

Enter 24, then press x^2. The display should show 576.

Using Statistical Functions

The Business Calculator can perform some fairly sophisticated statistical procedures with a minimum of effort on your part. When you decide you wish to do a statistical analysis of a set of data the first thing you need to do is turn on the statistics mode. To do this you press STAT. This will bring up a dialog box which will show the data points as you enter them. For examples on entering data see One Variable Statistical Analysis and Two Variable or Regression Analysis.

The dialog box has four buttons which allow you to edit the data points. The following is a list of the button, its keyboard equivalent, and its function.

Button	Key	Function
Return	R	Switch back to the main calculator.
Load	L	Enter the currently selected x data point from the statistics box into the display.
Delete	D	Delete the currently selected data from the statistics box.
Clear All	C	Delete all the data from the statistics box.

Related Topics

One Variable Statistical Analysis
Two Variable or Regression Analysis

One Variable Statistical Analysis

One variable statistical analysis will calculate the mean and the standard deviation of a set of numbers. It makes the assumption that the numbers are normally distributed.

Example

You are a teacher and you want to know the mean and standard deviation of a group of test scores. You have the following set of scores: 99, 96, 87, 75, 68, 78, 98, 66, 72, 84.

Entering the information and calculating the mean and standard deviation

1. Press STAT. This will bring up the statistics dialog box.
2. Enter 99, then press DATA. Notice in the statistics box that 99 appears as the first data point.
3. Enter 96, then press DATA.
4. Enter the rest of the scores in the same way.
5. Press Mx. This will display the mean score.

Answer: 82.3

6. Press pSx. This will give the standard deviation assuming this group of scores is the whole population. In other words, the sum of squares is divided by n. This estimator is unbiased.

Answer: 11.77327482054

7. Press Sx. This will give the standard deviation assuming this group of scores is a sample from the population. In other words, the sum of squares is divided by n-1. This estimator has the lowest mean square error.

Answer: 12.41012131734

Related Topics
Two Variable or Regression Analysis
Using Statistical Functions

Two Variable or Regression Analysis

This is used primarily to determine what kind of relationship there is between two different variables.

Example

You want to know if there is a relationship between how your students score on the first exam and how they score on the second exam. Given the following sets of scores, do the statistical analysis.

Student	Exam 1	Exam 2
1	99	90
2	96	83
3	87	94
4	75	76
5	68	60
6	78	87
7	98	97
8	66	71
9	72	79
10	84	83

Entering the information and doing the analysis

1. Press STAT. This brings up the statistics dialog box.
2. Enter 99, then press (x,y). This enters the first test score as the independent (x) variable.
3. Enter 90, then press DATA. This enters the second test score as the dependent (y) variable. Notice that the x and y variables now appear in the statistics dialog box.
4. Enter the rest of the data in the same manner.
5. Press Mx. This gives the mean of the first exam scores. The display should show **82.3**.
6. Press My. This gives the mean of the second exam scores. The display should show **82**.
7. Press pSx. This gives the standard deviation of the first exam scores assuming they are the whole population. This implies that the sum of squares is divided by n. This is an unbiased estimator. The display should show **11.77327482054**.
8. Press pSy. This gives the standard deviation of the second exam scores assuming they are the whole population. The display should show **10.53565375285**.
9. Press Sx. This gives the standard deviation of the first exam scores assuming they are a sample of the population. This implies that the sum of squares is divided by n-1. This is the estimator with the lowest mean square error. The display should show **12.41012131734**.
10. Press Sy. This gives the standard deviation of the second exam scores assuming they are a sample of the population. The display should show **11.10555416597**.
11. Press R. This gives the correlation between the two test scores. A value close to 1 implies strong positive correlation and a value close to -1 implies strong negative correlation. The display should show **.7965227297398**.
12. Press a. This gives the y-intercept if we were to draw a regression line through the points. The display should show **23.33727725272**.

13. Press b. This gives the slope of the regression line. The display should show **.7127912849001**.
14. Enter 90, then press Y'. This gives the estimated value of the second exam score if the first exam score is 90. The display should show **87.48849289373**.
15. Enter 85, then press X'. This gives the estimated value of the first exam score if the second exam score is 85. The display should show **86.50880566802**.

Sum-x^2, Sum-y^2, and Sum-xy are used in calculating the numbers above. If you wish to know the value of the sum of x squared then press Sum-x^2. If you wish to know the value of the sum of y squared then press Sum-y^2. If you wish to know the value of the sum of x times y then press Sum-xy.

Related Topics

One Variable Statistical Analysis
Using Statistical Functions

g is the rate at which payments grow per period.

Growing Annuities

Calculating Present Value

Example

You are thinking of buying a security which will make 5 annual payments beginning 1 year from today. The first payment is $1000 and the payments will grow at 6% per year. If the market rate of interest is 10%, what is the present value of the security?

Determining the variables

n = 5
FV = 0
PMT = 1000
g = 6
i = 10

Entering the information and calculating PV

1. Press CA to clear all the registers.
2. Enter 5, then press n.
3. Since we cleared the registers, FV is already 0.
4. Enter 1000, then press PMT.
5. Enter 6, then press g.
6. Enter 10, then press i.
7. Press COMP, then press PV.

Answer: 4,226.680095125

Annuity Dues

Example

Look back at the example above. Assume that the first payment occurs today instead of in 1 year.

Determining the variables

n = 5
FV = 0
PMT = 1000
g = 6
i = 10

Entering the information and calculating PV

1. Press CA to clear all the registers.
2. Enter 5, then press n.
3. Enter 1000, then press PMT.

4. Enter 6, then press g.
5. Enter 10, then press i.
6. Press BGN to tell the calculator that the payment occurs at the beginning of the period.
7. Press COMP, then press PV.

Answer: 4,649.348104638

8. Press BGN to return the calculator to normal mode.

Calculating Future Value

Example

You have just left an old job and received $10,000 in pension benefits. To avoid taxes you have decided to have the money deposited in your new employers pension fund. In addition, 5% of your annual income will be deposited into the fund at the end of each year, beginning 1 year from today. The first payment is based on a salary of $35,000 and is expected to grow at an annual rate of 4%. The fund earns 12% per year. If payments will be made for 15 years, how much money will you have in the fund in 15 years?

Determining the variables

n = 15
PV = 10,000
PMT = 35,000 * .05 = 1750
g = 4
i = 12

Entering the information and calculating FV

1. Press CA.
2. Enter 15, then press n.
3. Enter 10,000, then press PV.
4. Enter 1750, then press PMT.
5. Enter 4, then press g.
6. Enter 12, then press i.
7. Press COMP, then press FV.

Answer: 135,074.2693934

To calculate the future value when the first payment occurs at the beginning of the period, press BGN before computing FV.

Calculating Payments

Example

You wish to have $20,000 in 10 years. You plan on making your first deposit in 1 year and will increase your deposits by 5% per year. If the money will earn 8% interest, how much do you need to deposit in 1 year?

Determining the variables

n	= 10
PV	= 0
FV	= 20,000
g	= 5
i	= 8

Entering the information and calculating PMT

1. Press CA.
2. Enter 10, then press n.
3. Enter 20,000, then press FV.
4. Enter 5, then press g.
5. Enter 8, then press i.
6. Press COMP, then press PMT.

Answer: 1,132.010604297

If the first payment were to occur at the beginning of the period, you would press BGN before COMP PMT.

Date Calculations Procedures

Number of Days	This procedure computes the number of days between a beginning date and an ending date.
Compute Ending Day	This procedure computes an ending date based on the number of days given. The number of days can be positive (forward) or negative (backward) number.

NOTE:
The computation does take leap years into consideration.
The dates must be between the years 1900 and 2035.

Time Value of Money Procedures

Time value of money procedures are concerned with the value or price put on time.

Future Value Procedure

Present Value Procedure

Payment Required Procedure

Interest Rate Earned Procedure

Bonds Procedures

The bonds procedures can compute bond price and bond yields.

Bond Price Procedure

Bond Yields Procedure

Option Pricing Procedures

Options are contractual agreements that give the owner the right to buy an asset (CALL) or to sell an asset (PUT) on or before a given date at a fixed price.

Call Options - This procedure will compute the value of a call option using the Black-Scholes option pricing model.

Put Options - This procedure will compute the value of a put option using the Black-Scholes option pricing model.

INPUT:

Asset Price - The current price of the asset.

Exercise Price - The fixed price which the option holder can buy or sell the underlying asset.

Volatility - The variance (per year) of the continuous return on the underlying asset.

Risk-Free Rate - This is the risk-free rate of return (annualized).

Expiration Date - This is the maturity date of the option.

NOTES:

Cash Flow - If cash flows are expected to occur on the asset during the life of the option, then the asset price should be the current price minus the present value of the expected cash flows.

Type - The Black-Scholes formula is designed for European options. Therefore, it fails to account for the early exercise premium on American options.

Moneyness - The Black-Scholes formula works best for options that are near the money (the asset price is close to the exercise price).

Loans Procedures

These procedure will allow you to perform a variety of loan and mortgage analysis.

Loan Amortization Procedure

Accelerated Payment Procedure

Affordable House Procedure

Loan Amortization Procedure

This procedure will allow you to compute the payment required for a loan and create a loan amortization schedule.

Simply enter the required information on the screen and press ***Compute*** to find the required payment. Press ***Schedule*** to display the loan amortization schedule. The loan amortization schedule will be displayed using the Windows' Notepad program. The Notepad program allows you to print and edit the loan amortization schedule as well.

INPUT:

Loan Amount - Enter the dollar amount of the loan.

Total Periods - This is the number of total periods expected (**NOT** the number of periods per year).

Payment Period - This is the frequency that payments are made. Payments can be made daily (365/year), weekly (52/year), biweekly (26/year), monthly (12/year), bimonthly (6/year), quarterly (4/year), semiannually (2/year), annually (1/year).

Payment Method - Payments can be made at the beginning of the period (Advance) or the payment can be made at the end of the period (Arrears).

Compounding Period - This is the frequency that interest payments are reinvested.

Annual Rate - This is the annual percentage rate (APR) or the nominal annual interest rate.

Description - This field may be used to describe the loan such as a person's name or the address of the property.

NOTES:
Since the Notepad program has a file size limit, the number of payments cannot exceed 700. The beginning and ending dates must be between the years 1900 and 2035.

Accelerated Payment Procedure

This procedure will allow you to compute the total interest you will save on a loan, if you make an Extra Regular Payment. The procedure asks for the extra amount paid towards the principal and after which payment period number to start the extra payments. A full amortization schedule is also available to show a detailed accounting of the results.

Simply enter the required information on the screen and press ***Compute*** to find the total interest saved. Press ***Schedule*** to display the loan amortization schedule. The loan amortization schedule will be displayed using the Windows' Notepad program. The Notepad program allows you to print and edit the loan amortization schedule as well.

INPUT:

Loan Amount - Enter the dollar amount of the loan.

Total Periods - This is the number of total periods expected (**NOT** the number of periods per year).

Payment Period - This is the frequency that payments are made. Payments can be made daily (365/year), weekly (52/year), biweekly (26/year), monthly (12/year), bimonthly (6/year), quarterly (4/year), semiannually (2/year), annually (1/year).

Payment Method - Payments can be made at the beginning of the period (Advance) or the payment can be made at the end of the period (Arrears).

Compounding Period - This is the frequency that interest payments are reinvested.

Annual Rate - This is the annual percentage rate (APR) or the nominal annual interest rate.

Increase after Period - The extra payment will be applied after this payment period number.

Extra Amount Paid - The dollar amount of the extra regular payment which will be applied towards the principal.

OUTPUT:

Periods to Pay Off - The number of payment periods to pay off the loan.

Payment + Extra - The dollar amount of the required loan payment plus the extra regular payment.

Total Interest - The total amount of interest paid on the loan.

Total Interest Saved - The total amount of interest saved by making extra regular payments on the loan.

NOTES:
Since the Notepad program has a file size limit, the number of payments cannot exceed 700.
The beginning and ending dates must be between the years 1900 and 2035.

Affordable House Procedure

This procedure will allow you to determine how much of a house you can afford. This is determined by the maximum bank loan that you could qualify for and the amount of cash you have on hand.

Simply enter the required information on the screen and press ***Compute*** to find the affordable house price.

INPUT:

Annual Income - Gross annual income.

Cash Available - Amount of cash you have on hand to use towards a house.

Est. Tax & Insur. - Estimated Tax and Insurance. The annual amount you expect to pay for property taxes and insurance (fire and liability).

Est. Maintenance - Estimated Maintenance. The annual amount you expect to pay for maintenance of the house.

Income for Payments (%) - The percentage of your gross income that can be used towards the purchase of a house. Most banks will allow you to spend up to 28%.

Annual Rate - This is the annual percentage rate (APR) or the nominal annual interest rate that you expect to finance the house at.

Number of Months - The total number of months the loan for the house will be financed over. For example, a 30 year loan would have 360 months.

OUTPUT:

Amount Financed - The amount of the house purchase price that would be financed. This is the maximum loan amount that you could qualify for.

Affordable House - Maximum affordable house price. This is computed by adding the amount financed and the cash available.

Down Payment (%) - The down payment percentage currently available. This is the percentage of cash available to the affordable house price.

Payment Amount - This would be the amount of your monthly loan payment.

Future Value Procedure

This procedure will compute the value of a single deposit or a series of payments which are invested for a particular number of periods.

INPUT:

Initial Deposit - The initial dollar amount deposited on the beginning date.

Total Periods - This is the number of total periods expected (**NOT** the number of periods per year).

Payment Period - This is the frequency that payments are made. Payments can be made daily (365/year), weekly (52/year), biweekly (26/year), monthly (12/year), bimonthly (6/year), quarterly (4/year), semiannually (2/year), annually (1/year).

Payment Method - Payments can be made at the beginning of the period (Advance) or the payment can be made at the end of the period (Arrears).

Payment Amount - This is the dollar amount of a series of payments.

Compounding Period - This is the frequency that interest payments are reinvested.

Annual Rate - This is the annual percentage rate (APR) or the nominal annual interest rate.

NOTE:
The beginning and ending dates must be between the years 1900 and 2035.

Present Value Procedure

This procedure will compute the current value of a future lump sum or a series of payments which are invested for a particular number of periods.

INPUT:

Final Lump Sum - The dollar amount of a final lump sum payment made on the ending date.

Total Periods - This is the number of total periods expected (**NOT** the number of periods per year).

Payment Period - This is the frequency that payments are made. Payments can be made daily (365/year), weekly (52/year), biweekly (26/year), monthly (12/year), bimonthly (6/year), quarterly (4/year), semiannually (2/year), annually (1/year).

Payment Method - Payments can be made at the beginning of the period (Advance) or the payment can be made at the end of the period (Arrears).

Payment Amount - This is the dollar amount of a series of payments.

Compounding Period - This is the frequency that interest payments are reinvested.

Annual Rate - This is the annual percentage rate (APR) or the nominal annual interest rate.

NOTE:
The beginning and ending dates must be between the years 1900 and 2035.

Payment Required Procedure

This procedure will compute the payment amount required to reach some future sum.

INPUT:

Loan Amount - If this is a loan, enter the dollar amount of the loan. If this is an annuity, enter 0.0 for the amount.

Total Periods - This is the number of total periods expected (**NOT** the number of periods per year).

Payment Period - This is the frequency that payments are made. Payments can be made daily (365/year), weekly (52/year), biweekly (26/year), monthly (12/year), bimonthly (6/year), quarterly (4/year), semiannually (2/year), annually (1/year).

Payment Method - Payments can be made at the beginning of the period (Advance) or the payment can be made at the end of the period (Arrears).

Future Value - This is the dollar amount of some future sum that is to be reached.

Compounding Period - This is the frequency that interest payments are reinvested.

Annual Rate - This is the annual percentage rate (APR) or the nominal annual interest rate.

NOTE:
The beginning and ending dates must be between the years 1900 and 2035.

Interest Rate Earned Procedure

This procedure will compute the annual rate and the effective rate for an investment that is liquidated at the end of the specified period.

INPUT:

Amount Invested - This is the dollar amount of the investment.

Amount Returned - This is the total dollar amount returned from the investment.

Total Periods - This is the number of total periods expected (**NOT** the number of periods per year).

Compounding Period - This is the frequency that interest payments are reinvested.

OUTPUT:

Annual Rate - This is the annual percentage rate (APR) or the nominal annual interest rate.

Effective Rate - This is the effective annual interest rate (EAR).

NOTE:
The beginning and ending dates must be between the years 1900 and 2035.

Bond Yields Procedure

This procedure will allow you to compute the Current Yield, Yield-to-Maturity, and Yield-to-Call on a bond.

Simply enter the required information on the screen and press ***Compute*** to find the yields. Press ***Print*** to print the displayed information.

INPUT:

Description - This field may be used to describe the bond.

Settlement Date - The date the buyer and seller exchange cash and securities, and the buyer becomes the legal owner of the securities. The settlement date for corporate, municipal, and agency bonds is usually five business days after the trade date, while U.S. Government bonds have a settlement date of one business day after the trade date.

Maturity Date - The date when the bond makes its last payment.

Call Date - For callable bonds enter the bond's call date. For noncallable bonds enter the maturity date.

Days Per Year - Number of days per year field is used to determine how accrued interest is to be calculated. 360/360 means that every month has 30 days and each year has 360 days (most corporate bonds use this method). Exact/365 means that each year has 365 days and an exact number of days for each month is used (U.S. Government Bonds use this method).

Current Price - The price of the bond in the resale market.

Coupon Rate - The annual interest rate the bond pays.

Compounding Period - This is the frequency that interest payments are reinvested. Most bonds compound semiannually.

Par Value - The nominal or face value of the bond. Usually bonds have a Par Value of $1,000.

Call Price - For callable bonds this is the amount at which the issuer has the right to repurchase its bonds before the stated maturity date. The call price is usually one year's interest plus the Par Value. For noncallable bonds enter the Par Value.

OUTPUT:

Current Yield - The amount of interest paid to a bondholder over a one year period

divided by the bond's current price.

Yield-to-Maturity - The interest rate of the bond when it is held to maturity. This number is computed through numerical analysis.

Yield-to-Call - The interest rate of the bond when it is held to the call date. This number is computed through numerical analysis.

NOTES:
All dates must be between the years 1900 and 2035.

Bond Price Procedure

This procedure will allow you to compute the Present Value, Accrued Interest, and Quoted Price of a bond.

Simply enter the required information on the screen and press ***Compute*** to find the price and accrued interest of the bond. Press ***Print*** to print the displayed information.

INPUT:

Description - This field may be used to describe the bond.

Settlement Date - The date the buyer and seller exchange cash and securities, and the buyer becomes the legal owner of the securities. The settlement date for corporate, municipal, and agency bonds is usually five business days after the trade date, while U.S. Government bonds have a settlement date of one business day after the trade date.

Maturity Date - The date when the bond makes its last payment.

Days Per Year - Number of days per year field is used to determine how accrued interest is to be calculated. 30/360 means that every month has 30 days and each year has 360 days (most corporate bonds use this method). Exact/365 means that each year has 365 days and an exact number of days for each month is used (U.S. Government Bonds use this method).

Yield-to-Maturity - This is the rate of return on the bond.

Coupon Rate - The annual interest rate the bond pays.

Compounding Period - This is the frequency that interest payments are reinvested. Most bonds compound semiannually.

Par Value - The nominal or face value of the bond. Usually bonds have a Par Value of $1,000.

OUTPUT:

Present Value - This is the present value of the bond.

Accrued Interest - The amount of interest the seller has earned since the last interest payment date to the settlement date. On the settlement date the buyer must pay the seller the accrued interest on the bond.

Quoted Price - This is the quoted price of the bond (Present Value *less* Accrued Interest).

NOTES:
All dates must be between the years 1900 and 2035.

Depreciation Procedures

Depreciation procedures are concerned with the annual deduction a firm can take to recover the cost of business or income producing property (such as plant and equipment) that is used for more than one tax year.

Declining Balance Procedure

MACRS Procedure

Straight Line Procedure

Sum-of-the-Years-Digits Procedure

Straight Line Depreciation Procedure

This procedure will allow you to compute the Straight Line Depreciation of an asset. This depreciation method uses the book value of the asset less its estimated residual value and allocates it equally to each period of the asset's life.

Simply enter the required information on the screen and press ***Compute*** to find the first year's depreciation expense. Press ***Schedule*** to display the full depreciation schedule in the Window's Notepad.

INPUT:

Beginning Date - The date the asset was placed into service. This procedure will compute the depreciation expense to the nearest whole month. If an asset is purchased on or before the 15th of the month, it is depreciated for the whole month. If an asset is purchased after the 15th of the month, it is not depreciated in that month.

Book Value - The original cost of the asset.

Residual Value - The estimated value of the asset at the end of its service life.

Service Life - The estimated useful life of the asset.

Business Use - The percentage of business use.

Description - This field may be used to describe the asset.

OUTPUT:

1st Year Deprec. - The first year's depreciation expense.

NOTES:
All dates must be between the years 1900 and 2035.

Declining Balance Depreciation Procedure

This procedure will allow you to compute the Declining Balance Depreciation of an asset. This accelerated depreciation method recognizes more depreciation expense early in the life of the asset than the straight line method. The depreciation expense is computed by multiplying the beginning of the period book value of the asset by an acceleration rate and by the straight line rate (1/Life).

Simply enter the required information on the screen and press ***Compute*** to find the first year's depreciation expense. Press ***Schedule*** to display the full depreciation schedule in the Window's Notepad.

INPUT:

Beginning Date - The date the asset was placed into service. This procedure will compute the depreciation expense to the nearest whole month. If an asset is purchased on or before the 15th of the month, it is depreciated for the whole month. If an asset is purchased after the 15th of the month, it is not depreciated in that month.

Book Value - The original cost of the asset.

Residual Value - The estimated value of the asset at the end of its service life.

Service Life - The estimated useful life of the asset.

Accelerated (%) - This is the accelerated percentage which can be between 100% and 300%. Most commonly used is 200% (Double-Declining Balance) and 150%.

Description - This field may be used to describe the asset.

OUTPUT:

1st Year Deprec. - The first year's depreciation expense.

NOTES:
All dates must be between the years 1900 and 2035.

MACRS Depreciation Procedure

This procedure will allow you to compute the Modified Accelerated Cost Recovery System (MACRS) of an asset. MACRS is mandatory for most tangible depreciable assets placed in service after December 31, 1986.

Simply enter the required information on the screen and press ***Compute*** to find the first year's depreciation expense. Press ***Schedule*** to display the full depreciation schedule in the Window's Notepad.

INPUT:

Beginning Date - The date the asset was placed into service.

Book Value - The original cost of the asset.

Recovery Period - The recovery period is determined by the class life (or assigned class life) of an asset. Under the MACRS, assets are classified by their present class life as follows:

3 year - property with a class life of four years or less.

5 year - property with a class life of more than four years and less than ten years. It includes: a) cars, b) trucks, c) technological equipment, d) computers and peripheral equipment, and e) office machinery (typewriters, calculators, etc.).

7 year - property with a class life of ten years or more but less than sixteen years. It includes any office furniture and fixtures.

10 year - property with a class life of sixteen years or more and less than twenty years. It includes vessels, barges, and tugs.

15 year - property with a class life of twenty years or more but less than twenty-five years. It includes municipal waste water treatment plants and telephone distribution plants.

20 year - property with a class life of twenty-five years and more. It includes municipal sewers and farm buildings.

27.5 years - Residential Real Property.

31.5 years - Nonresidential Real Property. The property has no class life or the class life is 27.5 years or more.

(Check the Standard Federal Tax Reports for more information on assigned class lives.)

Accelerated (%) - This is the accelerated percentage which can be 200% or 150%. The accelerated percentage depends on the type of property being depreciated.

Depreciation Method - The depreciation method can be either Accelerated (200% or 150%) or it can use the Alternate Straight Line method.

IRS Convention - IRS Averaging Conventions: *Mid Year* - property is treated as placed in service or disposed of in the middle of the tax year. *Mid Quarter* - all

property placed in service during any quarter of a tax year is treated as placed in service at the midpoint of that quarter. *Mid Month* - property placed in service during any month of a tax year is treated as placed in service at the middle of the month.

Business Use - The percentage of business use.

Description - This field may be used to describe the asset.

OUTPUT:

1st Year Deprec. - The first year's depreciation expense.

NOTES:
All dates must be between the years 1900 and 2035.

Sum-of-the-Years-Digits Depreciation Procedure

This procedure will allow you to compute the Sum-of-the-Years-Digits Depreciation of an asset. This depreciation method uses a declining-charge depreciation method. The depreciation is computed by multiplying the depreciable cost by a fraction (number of years remaining in the asset's life at the beginning of year divided by the sum of the years' digits).

Simply enter the required information on the screen and press ***Compute*** to find the first year's depreciation expense. Press ***Schedule*** to display the full depreciation schedule in the Window's Notepad.

INPUT:

Beginning Date - The date the asset was placed into service. This procedure will compute the depreciation expense based on the entire year. An asset purchased anytime during the year is depreciated for the whole year.

Book Value - The original cost of the asset.

Residual Value - The estimated value of the asset at the end of its service life.

Service Life - The estimated useful life of the asset.

Business Use - The percentage of business use.

Description - This field may be used to describe the asset.

OUTPUT:

1st Year Deprec. - The first year's depreciation expense.

NOTES:
All dates must be between the years 1900 and 2035.

Project Analysis Procedures

Project Analysis procedures are concerned with determining if a project will be financially successful.

Cash Break-Even Procedure

Accounting Break-Even Procedure

Financial Break-Even Procedure

Cash Break-Even Procedure

This procedure will allow you to compute a cash break-even point for a project. Cash break-even is the sales level that produces a zero operating cash flow. It does not account for depreciation or a required return. If sales are at the cash break-even level, the project has a negative net present value.

Simply enter the required information on the screen and press ***Compute***. Press ***Print*** to print the displayed information.

INPUT:

Total Fixed Costs - The fixed portion of costs over the time period. These are costs that must be paid regardless of the number of units produced. For example, leases and salaries are fixed costs.

Var. Costs (cost/unit) - Variable Costs per unit. These are the costs that depend on how many units are produced and are measured on a per unit basis. For example, materials and labor are variable costs.

Unit Selling Price - The price charged for each unit.

OUTPUT:

Cash Break-Even - Cash break-even is the sales level that produces a zero operating cash flow. It does not account for depreciation or a required return. Since you usually cannot produce a partial unit, the cash break-even level is rounded up to the next largest whole number.

Sales at Break-Even - This is the total sales revenue at the cash break-even point.

Fixed Costs as % of Sales - The percentage of fixed costs to sales revenue at the cash break-even point.

Var. Cost as % of Sales - The percentage of total variable cost to sales revenue at the cash break-even point.

Accounting Break-Even Procedure

This procedure will allow you to compute an accounting break-even point for a project. Accounting break-even is the sales level that produces a zero net income. It does not account for a required return, but does account for depreciation. Sales greater than the accounting break-even point do not guarantee a positive net present value.

Simply enter the required information on the screen and press ***Compute***. Press ***Print*** to print the displayed information.

INPUT:

Total Fixed Costs - The fixed portion of costs over the time period. These are costs that must be paid regardless of the number of units produced. For example, leases and salaries are fixed costs.

Var. Costs (cost/unit) - Variable Costs per unit. These are the costs that depend on how many units are produced and are measured on a per unit basis. For example, materials and labor are variable costs.

Unit Selling Price - The price charged for each unit.

Depreciation - The amount of depreciation expense claimed on the equipment used in the project.

OUTPUT:

Accounting Break-Even - Accounting break-even is the sales level that produces a zero net income. It does account for depreciation, but not required return. Since you usually cannot produce a partial unit, the accounting break-even level is rounded up to the next largest whole number.

Sales at Break-Even - This is the total sales revenue at the accounting break-even point.

Fixed Costs as % of Sales - The percentage of fixed costs to sales revenue at the accounting break-even point.

Var. Cost as % of Sales - The percentage of total variable cost to sales revenue at the accounting break-even point.

Financial Break-Even Procedure

This procedure will allow you to compute a financial break-even point for a project. Financial break-even is the sales level that produces a zero net present value. It does account for the required return. Sales greater than the financial break-even point do have a positive net present value.

Simply enter the required information on the screen and press ***Compute***. Press ***Print*** to print the displayed information.

INPUT:

Total Fixed Costs - The fixed portion of costs over the time period. These are costs that must be paid regardless of the number of units produced. For example, leases and salaries are fixed costs.

Var. Costs (cost/unit) - Variable Costs per unit. These are the costs that depend on how many units are produced and are measured on a per unit basis. For example, materials and labor are variable costs.

Unit Selling Price - The price charged for each unit.

Depreciation - The amount of depreciation expense claimed on the equipment used in the project.

Oper. CF at $0 NPV - Operating Cash Flow at $0 Net Present Value. This is the operating cash flow required for a net present value of zero. Operating cash flow is defined as follows.

OCF = EBIT + D - Taxes

where:

EBIT is earnings before interest and taxes.
D is Depreciation.
Taxes are the taxes paid on the income from the project.

(See example below for more information.)

Marginal Tax Rate - The tax rate paid on the next dollar of income.

OUTPUT:

Financial Break-Even - Financial break-even is the sales level that produces a zero net present value. It does account for required return. Since you usually cannot produce a partial unit, the financial break-even level is rounded up to the next largest whole number.

Sales at Break-Even - This is the total sales revenue at the financial break-even point.

Fixed Costs as % of Sales - The percentage of fixed costs to sales revenue at the financial break-even point.

Var. Cost as % of Sales - The percentage of total variable cost to sales revenue at the financial break-even point.

Example: Computing OCF at $0 NPV

Suppose a project has the same expected cash flows every year for five years. The initial investment is $3500. The required return is 15%. Let $3500 be the present value, 15% be the interest rate, and the number of periods be five. Then, compute the payment; this is the operating cash flow. Using the Payment Required Procedure:

Loan Amount:	3500
Total Periods:	5
Payment Period:	Annually
Payment Method:	Arrears
Future Value:	0
Compounding Period:	Annually
Annual Rate:	15

Compute Required Payment: 1044.10

Therefore, the operating cash flow required for a zero net present value is $1044.10

If you are only looking at one period at a time, the operating cash flow is the future value instead of an annuity payment.

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Registration Information

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Shareware is a distribution method, not a type of software. You should find software that suits your needs and pocketbook, whether it's commercial or Shareware. The Shareware system makes fitting your needs easier, because you can try before you buy. And because the overhead is low, prices are low also. Shareware has the ultimate money-back guarantee -- if you don't use the product, you don't pay for it.

WHY REGISTER THE BUSINESS CALCULATOR?

You are granted a limited license to use this Shareware Evaluation version of the Business Calculator for a 30-day trial period without cost. After this trial period, you must either Register the software or remove it from your computer system. Our hope is that you will find the software useful and thus register it.

WHAT DO REGISTERED USERS RECEIVE?

- License to continue to use the Business Calculator.
- Program Disk containing the latest, registered version of the Business Calculator that does not contain any reminder (nag) screens.
- Detailed printed manual.
- Automatic notification of new releases.
- Reduced cost upgrades.

PLEASE SELECT ONE OF THE FOLLOWING REGISTRATION TOPICS

How to Register by Check or Money Order
Information for Users Outside of the United States

Registering by Check or Money Order

View or Print an Order Form

Registration Cost is $25.00 (US).

- Includes shipping and handling within the United States or Canada.
- Outside of the United States or Canada, please add $2.00 (US) for international shipping and handling.
- Kansas Residents please add 4.9% sales tax.

Payment must accompany the order and must be a check, money order, or postal money order drawn on a U.S. bank in U.S. dollars.

Discounts are available on multi-user licenses for five workstations or more. Please contact us for more information.

Please make all checks or money orders payable to: **Etling Software**

Send your payment to:

Etling Software
1219 N. Rutland
Wichita, KS 67206

ORDER FORM

V2.20

To print the order form, choose the menu item **File : Print Topic**

Remit to: **Etling Software**
1219 N. Rutland
Wichita, KS 67206

QTY **TOTAL**

_____ **Business Calculator Software Package:** Each package includes the program disk, manual, and automatic registration which entitles the user to upgrade information.
Price per package is **$25.00** (includes shipping). _____

(Kansas residents add 4.9% sales tax) **Tax:** _____

Outside of the United States or Canada, add $2.00 (US) to cover international shipping and handling. _____

Grand Total: _____

Payment must accompany the order and must be a check or money order drawn on a U.S. bank in U.S. dollars. Discounts are available on multi-user licenses for five workstations or more. Contact us at the above address or CompuServe 70403,277 for more information.

Name: _____

Company: _____

Address: _____

_____

_____

Phone: (_____)_____ **FAX: (_____)_____**

Check the appropriate disk option: [ ] 3.5" disk [ ] 5.25" high-density disk

Where did you get your evaluation copy of the Business Calculator ?

_____

Information for Users Outside of the United States

Etling Software welcomes International Orders!

Methods of Payment

Since U.S. banks have large fees to cash foreign cheques (checks) for small amounts, Etling Software can only accept cheques drawn on a U.S. bank in U.S. dollars. We understand the difficulty of this and thus provide these alternative methods of payment:

American Express Money Orders are available in most countries throughout the world. They are usually available at your local bank for a small surcharge.

International Postal Money Orders are also available at most post offices throughout the world. There is just a small surcharge for these.

Shipping and Handling

For users outside of the United States and Canada, please add an additional $2.00 (US) to cover international shipping and handling. International packages are sent by First-Class Air Mail.

View or Print an Order Form

About Etling Software

Etling Software is a software development company specializing in business and educational software applications for the Windows environment. Etling Software is available for custom programming projects, please contact us for more information.

Etling Software consists of the following staff members:

Kent Etling has a B.S. degree in Computer Science (minor: Math) and a B.S. degree in Business Administration from the University of Missouri - Columbia. Kent Etling has works as a Senior Computer Programmer Analyst at the Research Center / College of Business & Public Administration / University of Missouri - Columbia for 5-years.

Cheri Etling has a B.S. degree in Chemical Engineering (minor: Math) and is all but done with a PhD. degree in Finance from the College of Business & Public Administration / University of Missouri - Columbia. Cheri Etling is a Finance Professor at Wichita State University.

Conversion Factors - Metric to English

To Obtain	Multiply	By
Inches	Centimeters	0.3937007874
Feet	Meters	3.280839895
Yards	Meters	1.093613298
Miles	Kilometers	0.6213711922
Ounces	Grams	0.03527396195
Pounds	Kilograms	2.204622622
Gallons	Liters	0.2641720524
Fluid ounces	Milliliters (cc)	0.03381402270
Square inches	Square centimeters	0.1550003100
Square feet	Square meters	10.76391042
Square yards	Square meters	1.195990046
Cubic inches	Milliliters (cc)	0.06102374409
Cubic feet	Cubic meters	35.31466672
Cubic yards	Cubic meters	1.307950619

Conversion Factors - English to Metric
Conversion Factors - General

Conversion Factors - English to Metric

To Obtain	Multiply	By
Microns	Mils	25.4
Centimeters	Inches	2.54
Meters	Feet	0.3048
Meters	Yards	0.9144
Kilometers	Miles	1.609344
Grams	Ounces	28.34952313
Kilograms	Pounds	0.45359237
Liters	Gallons	3.785411784
Milliliters (cc)	Fluid ounces	29.57352956
Square centimeters	Square inches	6.4516
Square meters	Square feet	0.09290304
Square meters	Square yards	0.83612736
Milliliters (cc)	Cubic inches	16.387064
Cubic meters	Cubic feet	0.02831684659
Cubic meters	Cubic yards	0.764554858

Conversion Factors - Metric to English
Conversion Factors - General

Conversion Factors - General

To Obtain	Multiply	By
Acres	Square miles	640
Cords	Cubic feet	128
Feet	Miles	5280
Fluid ounces	Pints	16
Knots	Miles per hour	0.86897624
Miles	Feet	0.0001894
Miles per hour	Knots	1.1508
Nautical miles	Miles	0.86897624
Pecks	Bushels	4
Pints	Quarts	2
Pounds	Tons	2000
Quarts	Gallons	4
Quarts (dry)	Pecks	8
Square feet	Acres	43560
Yards	Furlongs	220
Yards	Rods	5.5

Temperature Conversion Formulas:

Fahrenheit temperature = 1.8 (Celsius temperature) + 32

Celsius temperature = 0.5555 (Fahrenheit temperature - 32)

Conversion Factors - English to Metric
Conversion Factors - Metric to English