

Accurately v1.0

Contents

Time Value of Money calculations2

How to read this manual2

Normal operator functions.....2

Time Value of Money4

Options of Calculator.....5

Support and bug report.....5

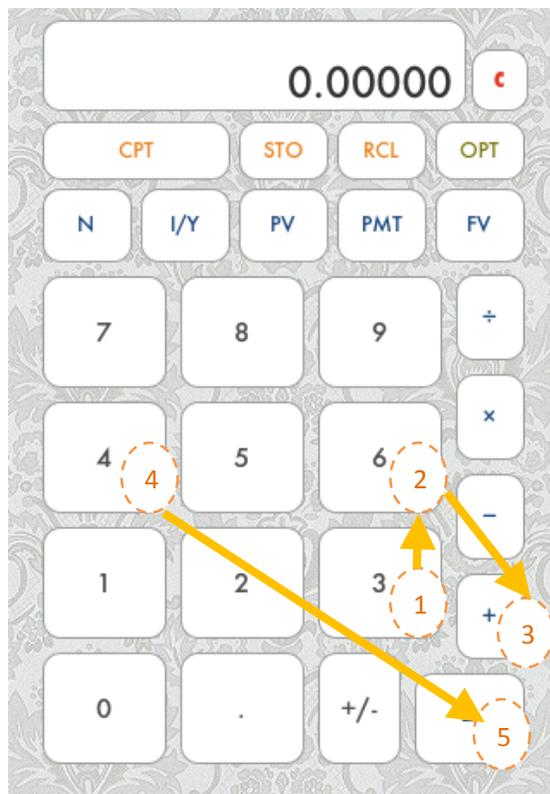
Time Value of Money calculations

Accurately works accurately as a financial calculator’s core function – time value of money calculation. It follows exact mathematical function explained in Texas Instrument BA II Plus calculator manual (http://education.ti.com/guidebooks/financial/baiiplus/BAIIPPLUSGuidebook_EN.pdf). For calculation of interest rate, it uses Newton–Raphson method to achieve the precision of calculation (http://en.wikipedia.org/wiki/Newton%27s_method)

How to read this manual

Special operator keys are noted in brackets – or []. Please note the following notations and the visual sequences in the screen shot.

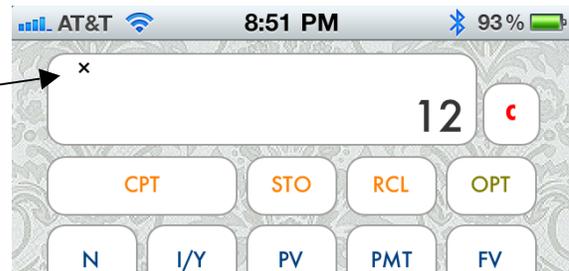
| Key | Result |
|-----------|--------|
| 36[+]4[=] | 40 |



Normal operator functions

When an operator key (+, -, x, ÷) is pressed, it appears on the left corner of the screen to indicate the calculator is waiting for the 2nd operand. Pressing on any number will clear the existing number.

Operator appears on the left top corner of the screen



Here are some examples of operations and the results.

| Key | Result |
|-----------|--------|
| 3[x]4[=] | 12 |
| 1[+].1[=] | 1.1 |

[+/-] key changes the sign of the number that appears on the screen.

| Key | Result |
|----------------|--------|
| 3[-]4[+/-][=] | 7 |
| 8[+/-][x]24[=] | -192 |

Last calculation result is used in continuous calculations.

| Key | Result |
|---------------------|--------|
| 4[+]3[+] | 7 |
| 2[=] | 9 |
| 2[x][=][x][=][x][=] | 256 |

Hitting [C] will clear a number in the display. Hitting [C] twice will clear the operator as well.

| Key | Result |
|----------------------|--------|
| 25[x]3[C]4[=] | 100 |
| 3[+]4[C][C][+][2][=] | 2 |

You can store up to 10 numbers and recall whenever you need.

| Key | Result |
|--------------------|---------------------------|
| 27[x]3[=] | 81 |
| [STO]0 | 81 is stored to memory 0 |
| 11[x][RCL][0][=] | 891 |
| [STO]1 | 891 is stored to memory 1 |
| 1000[-][RCL][1][=] | 109 |

Time Value of Money

Below are the TVM keys and the descriptions.

| TVM Key Name | Description |
|--------------|-----------------------------------|
| [N] | Number of periods |
| [I/Y] | Interest rate for year in percent |
| [PV] | Present value |
| [PMT] | Payment per period |
| [FV] | Future value |

Let's take a simple example. You borrowed \$10,000 from a bank at an interest rate of 5%, and promised you will pay back the principal 1 year later. You also promised to pay the interest every end of the month.

Your PV (present value) is 10,000. Since you are paying the entire amount at the end of all periods, FV (future value) is -10,000. Note that the sign is negative to indicate the direction of the money flow. Your I/Y will be 5. The calculator takes interest rate as percent. If you put 5 for I/Y, it will take it as 5% per year. Now if you calculate the PMT using the calculator, it will be the interest you will be paying the bank.

By default Periods per Year is set to 12 (later of this document will show you how to change it), which means you have number of periods as 12 since you are borrowing the money only for a year.

TVM calculation works by setting 4 parameters and calculate the rest.

In the example above, [N], [I/Y], [PV], [FV] are known, but [PMT] is not known.

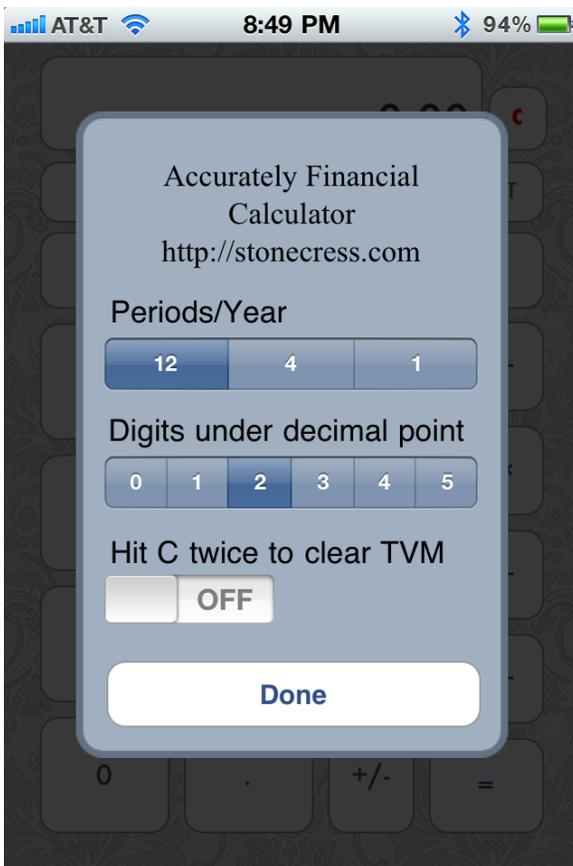
By pressing TVM key after a number, we can assign the known parameter. By pressing [CPT] and the TVM key, you can "Compute" the unknown parameter. Above example is calculated as below.

| Key | Result |
|----------------|-----------------|
| 12[N] | N set |
| 5[I/Y] | I set |
| 10000[PV] | PV set |
| 10000[+/-][FV] | FV set (-10000) |
| [CPT][PMT] | PMT=-41.67 |

Note that PMT result appears as a negative number indicating the money flow direction. You can also refer to the stored TVM parameters by using [RCL] key. For instance, [RCL][N] will give you 12 for above example.

A separate document "Time Value of Money Cheat Sheet.pdf" was prepared to demonstrate this calculation through a simplified car purchase options via financing and leasing examples.

Options of Calculator



By pressing [OPT] button, you can access the calculator settings screen.

Periods/Year is for TVM calculation. 12 indicates your payment schedule is monthly. If Periods/Year = 12, and $N=36$, it means your payment schedule is monthly, 3 years. This is by default 12.

Digit under decimal point option gives you a control over how the number will appear in the display. 2 means the numbers will be formatted as 11.23 or 40000.00

If you turn on Hit C twice to clear TVM, hitting C twice not only clears the pending operation, but also clears all stored memory in TVM variables.

Support and bug report

Please send bugs and requests for new features to email address below.

Stonecress.com@gmail.com