

Financial Planner

Owner's Manual

Please read before using this equipment

Features

- Saving calculations.
- Loan payment calculations (loans, mortgages, etc.)
- Amortization function.
- Cash flow analysis.
- Day calculation.
- Check book function with security password.
- Tax calculations.
- Currency conversions.
- Business profit analysis (cost, sell & margin).
- Metric conversion.
- Built-in 3-key memory functions.
- Auto power-off – turns unit off after 6 minutes idle.
- Slip cover – slips the unit out of the “Base”, reverse it, and slide it back in the base to store.
- Integrated flip-down stand, for easy viewing adjustment.

Getting Started

This calculator is powered with a long-life, lithium battery to assure uninterrupted service. (See “Battery Replacement” below for change-out procedure.)

Power On and Off

[ON] – Pressing this key and holding it a second turns the calculator on.

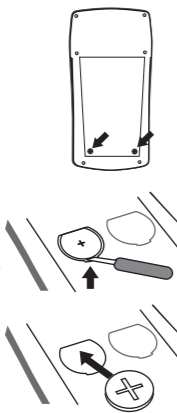
[AC] – This key is used to clear all calculations, which is accomplished with a tap.

[CE] – Tapping this key clears only the last entry without clearing the problem.

[OFF] - Turns the calculator off. The unit also has an auto power-off feature which turns the unit off after 6 minutes of non-use.

Battery Replacement

1. Slide the unit out of its case and turn the unit over, face down.
2. Use a small head screwdriver to loosen two screws on battery compartment cover and remove the cover (see diagram).
3. Use a small head screwdriver to push up old battery (see diagram).
4. Replace the lithium battery (CR-2025), making sure the positive (+) side is up.
5. Replace the cover and screws.



Note: Even if the calculator is operating normally, replace the battery at least once every two years. A dead battery can leak, causing damage to and malfunction of the calculator. Never leave a dead battery in the calculator.

Saving calculations

The saving mode [SAVE\$] lets you calculate any one of the following values, by inputting values for the other four: current deposit (DEP), monthly saving (SAV), number of years (N), annual yield (I/Y), and future value (FV).

Example: How much money will I have if I save \$150 a month at 4% for the next 10 years?

Description	Press	Display
To enter the saving mode.	[SAVE\$]	DEP= 0 [?]
No current deposit, keep DEP zero.	[▶]	SAV= 0 [?]
Monthly saving	[1][5][0][=]	N= 0 [?]
Number of years	[1][0][=]	I/Y= 0 [?]
Annual yield	[4][=]	C/Y= 12 [?]
Keep number of compound periods a year of 12.	[▶]	FV= 0 [?]
To perform the calculation.	[CPT]	FV= 22'161.10

Note: Press [=] to store the value of a variable. Press [▶] to skip to the next variable without input a value.

Example: To calculate the future value (FV) of an investment vehicle for 4 years that pays an annual interest rate of 4% (compounded monthly), when the initial deposit is \$1,000?

Description	Press	Display
To enter the saving mode.	[SAVE\$]	DEP= 0 [?]
Initial deposit,	[1][0][0][0][=]	SAV= 0 [?]
No monthly saving	[▶]	N= 0 [?]
Number of years	[4][=]	I/Y= 0 [?]
Annual yield	[4][=]	C/Y= 12 [?]
Keep number of compound periods a year of 12.	[▶]	FV= 0 [?]
To perform the calculation.	[CPT]	FV= 1'173.20

Loan & Mortgage calculations

The TVM (time value of money) mode [TVM] lets you calculate any one of the following values, by inputting values for the other three: loan/mortgage amount (PV), annual interest rate (I/Y), number of years (N), and monthly payment (PMT).

Calculating an automobile loan

You have your eye on a new car. The cost of the car is \$22,000 and your down payment will be \$5,000. You will be financing \$17,000 at 8% for 5 years. What will your payments be?

Description	Press	Display
To enter the TVM mode.	[TVM]	PV= 0 [?]
Select end -of term or beginning-of-term payment.	[◀] then [+] or [-] (in this case “end-of term” is selected)	END
Confirm “END”	[=]	PV= 0 [?]
Loan amount	[1][7][0][0][0][=]	I/Y= 0 [?]
Annual interest rate	[8][=]	N= 0 [?]
Number of years	[5][=]	PMT= 0 [?]
To perform the calculation.	[CPT]	PMT= 344.70

Note: The default number of payment per year (C/Y) is 12. If you need to change the C/Y setting, press [▶] to scroll through to the C/Y variable and enter the new number. After that, scroll back to the PMT variable and press [CPT] to perform the calculation.

Calculating a mortgage

You are buying a \$120,000 Town House. Your down payment is 10% (\$12,000), and you will be financing \$108,000 at 8% for 30 years. What is your payment?

Description	Press	Display
To enter the TVM mode.	[TVM]	PV= 0 [?]
Select end -of term or beginning-of-term payment.	[◀] then [+] or [-] (in this case “end-of term” is selected)	END
Confirm “END”	[=]	PV= 0 [?]
Loan amount	[1][0][8][0][0][0][=]	I/Y= 0 [?]
Annual interest rate	[8][=]	N= 0 [?]
Number of years	[3][0][=]	PMT= 0 [?]
To perform the calculation.	[CPT]	PMT= 792.47

A word about mortgage payments (PITI)

A mortgage payment will include the mortgage payment principal and interest, in this case \$792.47. It will also include the monthly real estate taxes and insurance payment (Divide the annual rate by 12 to get the monthly rate).

Example:

Annual taxes at \$2,400, and annual insurance at \$600 = \$200 monthly tax payment + a \$50 monthly insurance payment. Adding these to the total payment of \$792.47 give us a total monthly payment of \$1,042.47 (this is called Principal + Interest + Taxes + Insurance or PITI).

How to compute the mortgage payment you can afford

Industry guidelines indicate that a consumer should spend about 28% of his monthly income on housing. If your combined family monthly income is \$6,000, you can afford a mortgage payment (PITI) of \$1,680.

Press	Display
[6][0][0][0][×][2][8][%]	1'680.

(Other payments, like credit card and car payments, installment loans, etc., should not exceed 36% of your gross family monthly income.)

How much loan can I get with a PITI of \$1,680

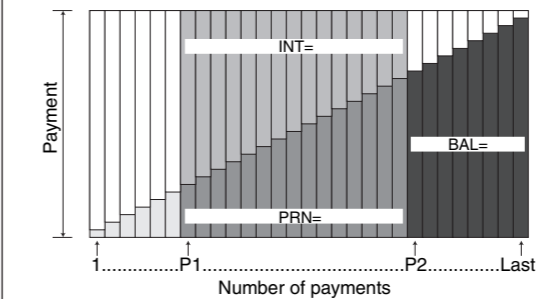
Description	Press	Display
To enter the TVM mode.	[TVM]	PV= 0 [?]
Select end -of term or beginning-of-term payment.	[◀] then [+] or [-] (in this case “end-of term” is selected)	END
Confirm “END”	[=]	PV= 0 [?]
Scroll to “I/Y=”	[▶]	I/Y= 0 [?]
Annual interest rate	[8][=]	N= 0 [?]
Number of years	[3][0][=]	PMT= 0 [?]
Monthly payment	[1][6][8][0][=]	C/Y= 12 [?]
Scroll to “PV=”	[▶][▶]	PV= 0 [?]
To perform the calculation.	[CPT]	PV= 228'956.27

Amortization

After calculating the payment by using the TVM function, you can press [AMORT] to view the amortization schedule. The amortization breaks down how much of your monthly payment goes towards the bank’s interest, and how much goes into paying off the principal of your loan.

Press [AMORT], you will be asked for the beginning (P1) and the end (P2) of the desired payment period.

BAL= : Principal balance upon completion of payment P2.
PRN= : Total principal paid from payment P1 to payment P2.
INT= : Total interest paid from payment P1 to payment P2.



Example: To check the principal and interest portion of the first payment.

Description	Press	Display
To enter the “AMORT” mode.	[AMORT]	P1= 1 [?]
Confirm “P1=” is the 1st payment	[=]	P2= 1 [?]
Confirm “P2=” is the 1st payment	[=]	BAL= 228'802.65
Principal portion of the 1st payment	[▶]	PRN= 153.62
Interest portion of the 1st payment	[▶]	INT= 1526.38

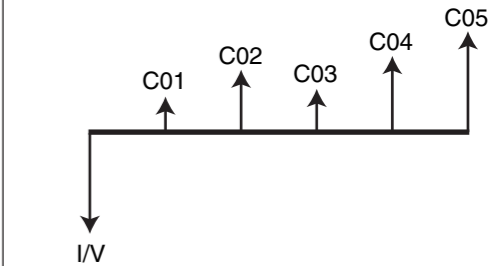
If you press [▶] again, the details of the next payment will be shown. To view the schedule for any other period, you can press [AMORT] and input the “P1” and “P2” again.

Description	Press	Display
To enter the “AMORT” mode.	[AMORT]	P1= 1 [?]
Confirm “P1=” is the 1st payment	[=]	P2= 1 [?]
“P2=” is the 180th payment	[1][8][0][=]	BAL= 175'796.20
Total principal paid from the 1st to the 180th payment	[▶]	PRN= 53'160.07
Total interest paid from the 1st to the 180th payment	[▶]	INT= 249'239.93

Cash flow analysis

The cash flow mode calculates the total of income and expenses over a fixed period, and then uses the discounted cash flow method to perform investment appraisal. Net present value (NPV) and internal rate of return (IRR) are appraised.

A cash flow diagram like the one shown below helps to visualize the movement of funds.



With this graph, the initial investment amount is represented by “I/V”. The cash flow one year later is shown by “C01”, two years later by “C02”, and so on.

Example: You are considering an investment opportunity which will have an initial investment of \$12,000 and will mature in 7 years. Your return is summarized below:

Year 1	\$1,200
Year 2	\$1,800
Year 3	\$2,000
Year 4	\$2,200
Year 5	\$2,200
Year 6	\$3,000
Year 7	\$3,000

The cost of capital to you is 6%, should you invest in this project?

Description	Press	Display
To enter the “cash flow” mode.	[CASH]	I/V= 0 [?]
Initial investment	[1][2][0][0][0][=]	I/Y= 0 [?]
Cost of capital (interest rate)	[6][=]	C01= 0 [?]
1st year income	[1][2][0][0][=]	F01= 0 [?]
Frequency	[1][=]	C02= 0 [?]
2nd year income	[1][8][0][0][=]	F02= 0 [?]
Frequency	[1][=]	C03= 0 [?]
3rd year income	[2][0][0][0][=]	F03= 0 [?]
Frequency	[1][=]	C04= 0 [?]
4th & 5th year income	[2][2][0][0][=]	F04= 0 [?]
Frequency	[2][=]	C05= 0 [?]
6th & 7th year income	[3][0][0][0][=]	F05= 0 [?]
Frequency	[2][=]	NPV= -90.07
To find out “IRR”	[▶]	IRR= 5.81

Since the 4th and 5th years’ income is the same we can input “2” into the variable “F04”. However, this can only be used in **consecutive years** with the same income. Otherwise, we have to input it separately with frequency equal to 1.

Note: If the net present value (NPV) is negative, the project should be rejected since it would not generate sufficient cash flow to repay the financial cost (and/or the opportunity cost) of undertaking it.

The internal rate of return (IRR) is the discount rate which will produce a NPV of nil. It is the point at which the present value of all the cash flows are equal to the initial investment. The IRR decision rule is:

- accept a project if its IRR ≥ decision criterion.
- reject if its IRR < decision criterion.

