

# Finance on the TI-83/TI-83 Plus/TI-84

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You can get to the TVM solver by pressing the [FINANCE] key and selecting option 1 on the TI-83, or pressing [APPS] and selecting [1:Finance] then [1:TVM Solver...] on the TI-83 Plus/TI-84. You will see a window that looks like the following except there may be different numbers.

```
N=80
I%=6.8
PV=350000
PMT=-3106.8937...
FV=0
P/Y=12
C/Y=12
PMT: [ ] [ ] [ ] [ ] BEGIN
```

N=Number of compoundings  
I%= annual interest rate  
PV= present value  
PMT= payment  
FV= future value  
P/Y= payments per year  
C/Y= compoundings per year  
PMT: END BEGIN

For our purposes, we will always set P/Y and C/Y to the same thing, the number of compoundings per year. Also all payments are made at the end of the compounding period, so END should always be highlighted.

## Compound Interest

**Example 1:** If \$100 is deposited into an account that earns 5% interest compounded monthly, then how much will be in the account after 3 years?

**Solution:** Put the following into the calculator. Please note that for the percentage we put in 5 and not .05.

```
N=36
I%=5
PV=-100
PMT=0
FV=
P/Y=12
C/Y=12
PMT: [ ] [ ] [ ] [ ] BEGIN
```

PV was a cash outlay. Cash outlays always go into the calculator as a negative number. As always, make sure that END is highlighted and move the cursor to FV= (You will not be allowed to leave FV blank until all of the other values are filled in) and press [SOLVE] ([alpha] [ENTER]).

The value of 116.1472231 gets filled in for FV, so the answer is \$116.15.

**Example 2:** If \$100 is deposited into an account that earns 5% interest compounded monthly, then how long will it take for the account to have \$150?

**Solution:** Here we are given everything except N, the number of compoundings.

```
N=
I%=5
PV=-100
PMT=0
FV=150
P/Y=12
C/Y=12
PMT: [ ] [ ] [ ] [ ] BEGIN
```

Since the FV is not a cash outlay we put the value in as a positive number. Now solve for N and we get N=97.5.

## Future Value

**Example 3:** What is the value of an ordinary annuity at the end of 15 years if \$100 is deposited each month into an account earning 5% compounded monthly.

**Solution:**

```
N=180
I%=5
PV=0
PMT=-100
FV=
P/Y=12
C/Y=12
PMT: [ ] [ ] [ ] [ ] BEGIN
```

PV is the value of the account at the beginning which is 0. PMT is a cash outlay so it goes in as -100 Solve, and FV = \$26728.89.

## Present Value

**Example 4:** You wish to set up an annuity that pays \$350 per month for 5 years. How much money must be deposited into an account that pays 6% compounded monthly in order to establish the annuity?

**Solution:**

```
N=60
I%=6
PV=
PMT=350
FV=0
P/Y=12
C/Y=12
PMT: [ ] [ ] [ ] [ ] BEGIN
```

FV should be 0 since you want there to be no money in the account after the 5 years. Solve and PV = -\$18103.95.