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.

\[
\begin{align*}
N &= \text{Number of compoundings} \\
I\% &= \text{annual interest rate} \\
PV &= \text{present value} \\
PMT &= \text{payment} \\
FV &= \text{future value} \\
P/Y &= \text{payments per year} \\
C/Y &= \text{compoundings per year} \\
PMT: \text{END BEGIN}
\end{align*}
\]

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.

\[
\begin{align*}
N &= 36 \\
I\% &= 5 \\
PV &= -100 \\
PMT &= 0 \\
FV &= \text{PV} \\
P/Y &= 12 \\
C/Y &= 12 \\
PMT: \text{END BEGIN}
\end{align*}
\]

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 the 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.

\[
\begin{align*}
N &= 36 \\
I\% &= 5 \\
PV &= 0 \\
PMT &= 100 \\
FV &= \text{PV} \\
P/Y &= 12 \\
C/Y &= 12 \\
PMT: \text{END BEGIN}
\end{align*}
\]

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:**

\[
\begin{align*}
N &= 180 \\
I\% &= 5 \\
PV &= 0 \\
PMT &= 100 \\
FV &= \text{PV} \\
P/Y &= 12 \\
C/Y &= 12 \\
PMT: \text{END BEGIN}
\end{align*}
\]

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:**

\[
\begin{align*}
N &= 60 \\
I\% &= 6 \\
PV &= 0 \\
PMT &= 350 \\
FV &= \text{PV} \\
P/Y &= 12 \\
C/Y &= 12 \\
PMT: \text{END BEGIN}
\end{align*}
\]

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