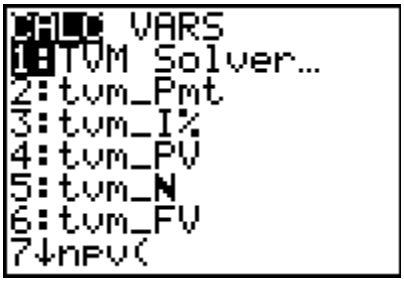
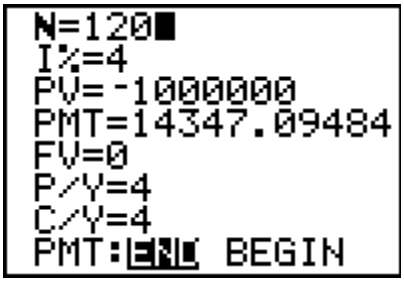
Texas Instruments Graphing Calculators have a built in app that may be used to compute quantities involved in compound interest, annuities, and amortization. For the examples below, we'll utilize the screens from a TI-84. To use the app properly, we need to understand the terms used in the app and the signs used on the numbers. We'll do this by carrying out some of the examples from Sections 5.1. To use the app, called TVM Solver, follow the steps below.

1. Press [ON] to turn on the calculator if it is not already on. 2. Press [APPS] to access the installed applications. 3. We want the Finance application. Press [ENTER] or [1] to start the Finance application.	
4. Press [ENTER] or [1] to start the TVM Solver.	
5. The screen in the TVM Solver shows several variables which may be changed by pressing the arrow keys to move to the line of the variable. Then the number on that line cam be edited.	

The values in the TVM Solver are quantities involved in compound interest and annuities.

- N is the number of periods in the term.
- I% is the annual interest rate written as a percent (not as a decimal). This means 4 percent is 4, not 0.04.

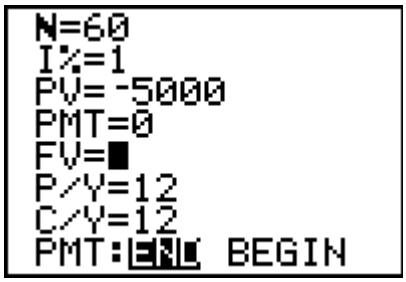
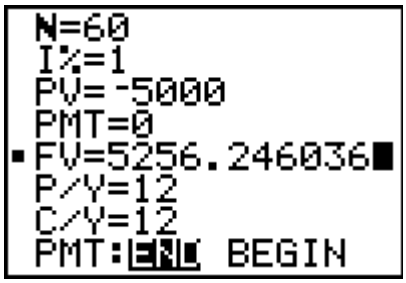
- PV is the present value.
- PMT is the payment.
- FV is the future value.
- P/Y is the number of payments per year.
- C/Y is the number of times interest is compounded in a year.
- PMT: END BEGIN indicates whether the payment is made at the end or the beginning of the period.

The TVM Solver has some interesting assumptions regarding the signs of the present value PV and future value FV. Amounts that are deposited into an account are negative. Amounts that you receive from an account are positive. Additionally, we'll assume no payments (other than interest) are made into or out of the account. For this reason, we'll set PMT = 0 for compound interest problems in Section 5.1.

Compound Interest

A customer deposits $\$5000$ in an account that earns 1% annual interest compounded monthly. If the customer makes no further deposits or withdrawals from the account, how much will be in the account in five years?

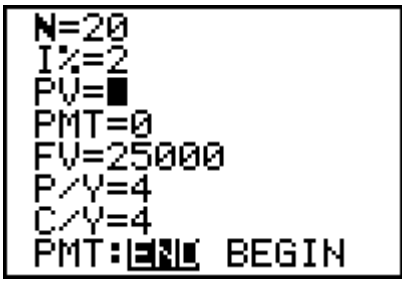
Solution In a compound interest problem, no regular payments are made into the account. This means that $PMT = 0$.

1. Put the entries into the TVM Solver shown on the right. Any value can be in place of FV since that is what the Solver will find and put in that position. 2. Move the cursor to the FV line using the arrow keys. The value on this line is irrelevant since it will be calculated in the next step.	
3. To solve for the future value, press ALPHA ENTER. Notice that the word SOLVE is printed in green above the ENTER button to help you remember this combination. The future value will be placed on that line. You will also see a small black square to the left of FV to indicate that the value was calculated. The future value is $\$5256.25$.	

Present Value

A couple needs $25,000 for a large purchase in five years. How much must be deposited now in an account earning 2% annual interest compounded quarterly to accumulate this amount? Assume no further deposits or withdrawals during this time period.

Solution In this problem, the future value is $25,000. We need to find the present value.

1. Put the entries into the TVM Solver shown on the right. Any value can be in place of PV since that is what the Solver will find and put in that position. 2. Move the cursor to the PV line using the arrow keys.	
3. To solve for the present value, press ALPHA ENTER. The present value will be placed on that line. You will also see a small black square to the left of PV to indicate that the value was calculated. The future value is $5256.25. This value is negative since it must be deposited in the account