Name: _____ Date: _____

Using the TVM Solver to Solve a Budget Problem

This worksheet will show you how to use a TVM solver to do Example 1 on page 52.

TVM stands for Time Value of Money. A TVM solver is a program that performs financial calculations.

The TI-83/84 series of calculators include a TVM solver.

1. Turn on your calculator.

2. Since you are dealing with money, two decimal places are appropriate.

    Press the **MODE** key. Cursor down one, and right three, to select 2 decimal places.

    Press **ENTER**.
    The results of all calculations will now be displayed with two decimal places.
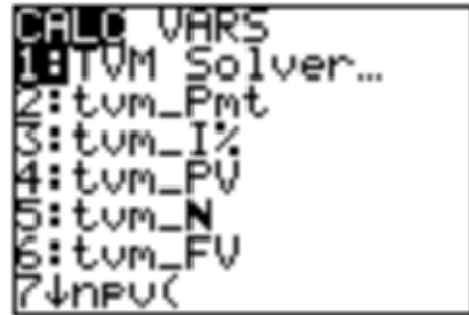
3. a) Press the **APPS** key.

The applications list will appear.

b) Select 1: Finance… by pressing the **ENTER** key.

The TVM solver menu will appear.

```
APPLICATIONS
1:Finance…
2:ALG1CH5
3:ALG1PRT1
4:CabriJr
5:CBL/CBR
6:Conics
7↓Inequalz
```

4. Press **ENTER** to select the TVM solver.

```
CALC VARS
1:TVM Solver…
2:tvm_Pmt
3:tvm_I%
4:tvm_PV
5:tvm_N
6:tvm_FV
7↓npv(
```

5. There may be some numbers left in the TVM solver from a previous use. You will replace these numbers with those from Example 1 on page 52.

```
N=
I%=7.427457867
PV=-1000
PMT=0
FV=1200
P/Y=2
C/Y=2
PMT:END BEGIN
```

Example 1: Esteban and Suzanne want to take their sons on a vacation to Florida in 1 year. They estimate the trip will cost $2500. They have an account that pays 3% interest per year, compounded monthly. Determine the amount they will need to deposit into the account at the end of each month to reach their goal.

N stands for the number of payments, so N = 12.
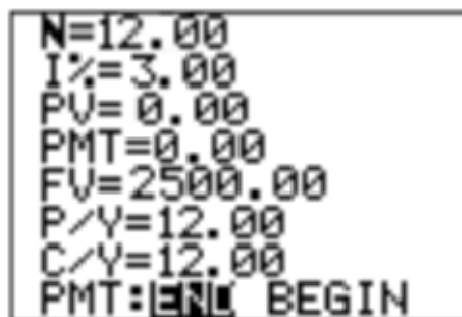I% stands for the interest rate, so I% = 3.
PV stands for Present Value, so PV = 0.
PMT stands for Payment. PMT is the number we want to calculate. For now, let PMT = 0.
FV stands for Future Value, so FV = 2500.
P/Y stands for the number of payments per year, so P/Y = 12.
C/Y is the number of times the interest is compounded in 1 year, so C/Y = 12

Use the cursor keys and number keys to enter the numbers where they belong. When you have finished, the TVM solver screen should look like this.
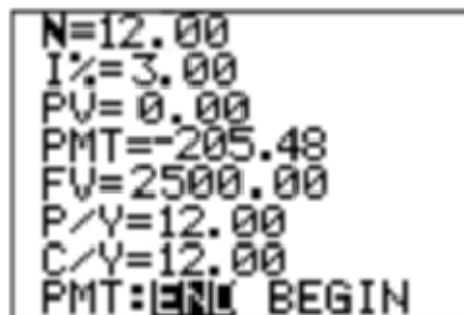
```
N=12.00
I%=3.00
PV=0.00
PMT=0.00
FV=2500.00
P/Y=12.00
C/Y=12.00
PMT:END BEGIN
```

6. Scroll up to PMT.

Press **ALPHA**, and then **ENTER**, to SOLVE for the payment.

Notice that the payment is negative. This is money that Esteban and Suzanne give up.

```
N=12.00
I%=3.00
PV=0.00
PMT=-205.48
FV=2500.00
P/Y=12.00
C/Y=12.00
PMT:END BEGIN
```

Esteban and Suzanne need to deposit $205.48 at the end of each month to reach their goal.