

## Notes 8.4 Annuities, Stocks, and Bonds

Many financial problems can be solved using the TVM Solver on your TI83 or TI84 calculator.

**Using the TVM Solver:**

(1) On TI-83 press **2nd** **x<sup>-1</sup>** (FINANCE). On TI-84 press **Apps** then choose finance.

(2) Press **enter** on TVM Solver

(3) Enter

- N = total number of payment periods
- I% = interest rate (**not** as a decimal)
- PV = initial value
- PMT = monthly deposit
- FV = future value
- P/Y = number of deposits per year
- C/Y = number of compounding periods per year
- PMT = highlight END for end of month deposits

(4) Arrow up to FV since we are looking for the future value

(5) Press **ALPHA** **ENTER** This will solve the problem.

The amount that appears is the future value (accumulated amount). It is negative because the calculator considers it an outflow of cash. Ignore the negative.

An **annuity** is a sequence of equal payments made at equal time periods. An IRA is an example of an annuity. An ordinary annuity assumes the same number of yearly payments and yearly compounding periods. The value of an annuity is the sum of all deposits plus all interest paid.

1) You deposit \$2000 into a savings plan at the end of each year for three years. The interest rate is 10% per year compounded annually. (Formula on page 469)

a. Find the value of the annuity after three years.

\$ 6620

N = 1 × 3  
 I% = 10  
 PV = 0  
 PMT = 2000  
FV = 0 ← solve  
 P/Y = 1  
 C/Y = 1

b. Find the interest

$$\begin{aligned} \text{Total Payments: } & 2000 \times 1 \times 3 \\ & = 6000 \end{aligned}$$

$$\text{Interest: } 6620 - 6000 = \text{\$ } 620$$