

Using the Graphing Calculator to Solve Interest Problems

Example 7

Mun-Hee and Min have each saved up some money to begin investing.

- Mun-Hee chose to invest \$800 in an investment that earns 12% simple interest per year.
- Min chose to invest \$650 in an investment that earns 9.5% interest compounded quarterly.

We will graph both of these investments using our graphing calculators.

Mun-Hee's Simple Interest Investment:

The graph of a simple interest investment can be entered into the Ti-84 using the following equation. Notice that this equation gives the total investment (it adds the interest portion onto the initial value of the investment).

$$\text{Total value of investment} = \text{Principal} + (\text{Principal} \times \text{rate} \times \text{time})$$

The investment will be entered in as:

$$y = 800 + 800 \times (.12 \times x)$$

Where y represents the total value of the investment and x represents the number of years.

Min's Compound Interest Investment:

The graph of a compound interest investment can be entered into the Ti-84 using the compound interest formula:

$$A = P \left(1 + \frac{r}{n} \right)^{nt}$$

The investment will be entered in as:

$$y = 650 \left(1 + \frac{.095}{4} \right)^{(4x)}$$

Where y represents the total value of the investment and x represents the number of years.

