Bellwork Thursday, March 13, 2014

1. An investment earns 8% interest each year. You invest $10,000 when you get your first job at 22 years old. How much is this investment worth at your retirement at age 62?

$y = 10000(1.08)^{40}$ $100\% + 8\% = 108\%$

$\$217,245.22$

2. You invest $10,000 at age 22 and want $1,000,000 when you retire at 62. What interest rate do you need to get in order for this to occur?

$\frac{1,000,000}{10,000} = \frac{10,000(X)^{40}}{10,000}$

$\sqrt[40]{100} = \sqrt[40]{X^{40}}$

$40\sqrt[x]{100} = 1.122$

$112.2\% \rightarrow 12.2\%$

3. If you invest $10,000 at age 22 and can get 8% interest how many years will it take to end up with $1,000,000? Round to the nearest tenth.

$1,000,000 = 10,000(1.08)^x$

$100 = 1.08^x$

4. If you want to invest some money at age 22 and can get 8% interest how much should your initial investment be in order to end up with $1,000,000 when you retire at age 62? Round to the nearest whole dollar.

$1,000,000 = x(1.08)^{40}$

$46,030.93$