Compound Interest Notes

**Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

$y=a(1+\frac{r}{n})^{t∙n}$

**y = final amount a = starting amount r = interest rate (in decimal form)**

**t = time n = # times the money will be compounded each year**

annually n = \_\_\_\_\_\_\_\_\_\_ semi-annually n = \_\_\_\_\_\_\_\_\_\_ quarterly n = \_\_\_\_\_\_\_\_\_\_

monthly n = \_\_\_\_\_\_\_\_\_\_ weekly n = \_\_\_\_\_\_\_\_\_\_ daily n = \_\_\_\_\_\_\_\_\_\_

**Example 1**

Sue invested $1000 in the local bank which promises to pay 6.32% interest compounded quarterly. Find her balance in 5 years.

**Example 2**

Jane invested $2100 at the credit union which offers semi-annual compounding at $4\frac{5}{8}\%$. How much interest will she have earned after 10 years, assuming that she makes no deposits or withdrawals?

**Example 3**

Edgar plans on purchasing a home in the year 2020. His goal is to have $50,000 for a down payment. How much should he deposit today if the bank is offering 6¾% compounded daily?

**Example 4**

Congratulations! You have finally saved the $50,000 you needed to put a down payment on a house. If your money has been in an account that paid 6% interest compounded semi-annually for the last 10 years, how much money did you invest?

**Example 5**

So you want to breed rabbits? If you start with two pairs of bunnies and the rabbit population increases at an average rate of 23% each month compounded weekly, how many rabbits will you expect to have at the end of the year?