Algebra II, Quiz 10.3-10.4

1. Do the following exponential expressions indicate **growth** or **decay**?

   a) $.98(1.03)^t$

   b) $7.04(.92)^t$

   c) $.22(1/2)^t$

2. Give the growth factor that corresponds to the given growth rate:

   a) 3.5% growth

   b) 74% decay

   c) 114% growth

   d) 99% decay

3. An investment initially worth $1000 grows by 12.5% per year. Complete the following table which shows the value of the investment over time:

t	0	1	3	5	10	25	50
V ($)	$1,000.00						

4. Write the functions below in the form $Q=ab^t$ and give the **values** of the constants a and b:

   a) $Q=\frac{2}{3}2^{t/2}$

   b) $Q=5 \cdot 2^t \cdot 3^t$

   c) $Q=-\frac{7}{4^t}$

5. Suppose a population varied by the equation $P=300 \cdot 2^{t/4}$ which is in the form $P=a \cdot b^{t/T}$. Give the values of the constants a, b, and T. What do these constants tell you about population growth? Also, give the annual growth rate.