

Complete the following exponential growth or decay problems after taking notes on VN 6.3.

1. Write out the exponential growth and decay formula that was in the Video: You should use this formula for all the questions on this assignment.
2. The duck population in Central Park increases by 12% each year. There are 1,780 ducks in the park right now. About how many ducks will there be in 3 years?
3. Mister Mack won the lottery! He is going to invest \$10,000 into a stock that gains 3% interest every month. How much money will he have in 12 months?
4. The Bumble Bee population in North Dakota decreases at a rate of 32% a week in the fall. If there are 8,200 bees at the end of August, about how many will there be at the end of November (12 weeks later)?

5. A huge ping-pong tournament is held in Beijing, with 65,536 participants at the start of the tournament. Each round of the tournament eliminates half the participants. How many participants remain after 10 rounds of play?
6. You work over the summer and have saved \$500. You decide to invest it in a two year CD (Certificate of Deposit) that earns .02 percent per month. How much will you have at the end of 2 years?

What if the interest were .02 percent **per year**, then how much would you have at the end of 2 years?

7. Identify each of the following as exponential Growth or Decay

a.  $y=5000(1.67)^4$  \_\_\_\_\_

b.  $y=0.6(1 + 0.1)^{10}$  \_\_\_\_\_

c.  $y=250(0.89)^{119}$  \_\_\_\_\_

d.  $y=1587(1 - 0.12)^4$  \_\_\_\_\_