Algebra 1 Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Exponential Word Problem Practice

Write an exponential equation for each situation. Then answer the question(s) for each.

1. Suppose a culture of bacteria begins with 5,000 cells and dies by 30% each year. How many

 cells will be left after 3 years?

2. The number of mosquitoes at the beginning of the summer was 4,000. The population of

 mosquitos is expected to grow at a rate of 25% a month. How many mosquitos will there be

 after 4 months? After 2 years?

3. Samantha’s hair was known to grow very rapidly. It began at a length of 6 inches and grew

 at a rate of 14% per week. How long will it be after the 5th week? After 1 year?

4. What is a, the initial amount, for the function: f(x) = 300$(1.16)^{x}$ ? Is this an example of

 exponential growth or decay? Explain your answer.

5. The attendance at the art museum at the New Year’s opening was 250 people. The

 attendance has been increasing at a rate of 3% each year. How many people will attend

 by the end of 1 year? By 42 months?

6. Riley’s Print Shop purchased a new printer for $35,000. Each year it depreciates at a rate

 of 5%. How much will the printer be worth 8 months? In 8 years?

7. A city has a population of 21,517 based on a census taken in 1998. If the population is

 expected to grow by 11% annually, what will the population be in the year 2030? In 2042?

8. The population of turtles in Boca Raton is decreasing by 10% per year. If there are 400

 Turtles now, how many will there be in 16 months? In 2 years?