Exponential Functions Test Review

Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Period \_\_\_\_\_\_\_\_\_\_\_ Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_

Circle the correct answer and record your answer on the answer document.

For #’s 1-5 determine if the sequence is

a) arithmetic

b) geometric

c) neither

1. 40, 10, $\frac{5}{2}$, $\frac{5}{8}$, . . .

2. 20, 16, 12, 8, . . .

3. -5, 10, -15, 20, . . .

4. 28561, 2197, 169, 13, . . .

5. $\frac{1}{3}, 1, \frac{5}{3}, \frac{7}{3}, 3, . . . $

6. The first term of a geometric sequence is 6 and the common ratio is -8. What is the 8th term?

7. The first term of a geometric sequence is -3 and the common ratio is ½. What is the 10th term?

8. What is the 13th term of the geometric sequence 2, -6, 18 . . . ?

For #’s 9-12 evaluate the function for the given value of x.

9. $y=2^{x}$ ; $x=5$ 10. $f\left(x\right)=3(4)^{x}$ ; $x=-1$

11. $\left(x\right)=\frac{1}{2}(5)^{x}$ ; $x=3$ 12. $y=0.5^{x}$ ; $x=-4$

Use the following scenario to answer questions 13-15. The function $f\left(t\right)=16(1.4)^{x}$ represents the number of deer in a forest after $t$ years.

13. What is the initial deer population?

14. How many deer are in the forest after 12 years?

15. During what year will the deer population triple?

16. Your new computer cost $1500 and depreciates in value each year by 18% each year. How much will your computer be worth in 6 years?

17. The population of a school is 800 students and is increasing at a rate of 2% per year. What is the population after 4 years?

18. You invest $50,000 at a rate of 3% compounded monthly. What is the value after 6 years?

19. You borrow $43,000 at a rate of 7.5% compounded monthly. How much do you owe after 5 years?

20. The value of a company’s equipment is $55,000 and decreases at a rate of 12% per year. What is the value of the equipment after 8 years?