9.1 – 9.4 Worksheet **Name_____Date_____Period__**

1) $A = p + prt, \text{ solve for } t$ 2) $V = \frac{1}{3}\pi r^2 h, \text{ solve for } h$ 3) $V = lwh, \text{ solve for } l$

Find the indicated term for the following Arithmetic sequence.

4) 5, 3.8, 2.6, 1.4…; find the 27th term 5) −5, 0, 5, 10…; find the 38th term

6) 16, 15.5, 15, 14.5, …; find the 15th term 7) 6, 9, 12, 15, …; find the 32nd term

Find the indicated term for the following Geometric sequence.

8) 3, 12, 48, 192, …; find the 15th term 9) 27, 9, 3, 1,…; find the 6th term

10) 1, 5, 25, 125,…; find the 10th term 11) 32, 16, 8, 4,…; find the 12th term

12) Annual sales for a fast food restaurant are $650,000 and are increasing at a rate of 4% per year. Write an exponential growth function to model the situation. Then find the annual sales after 5 years.

13) The population of a school is 800 and is increasing at a rate of 2%. Write an exponential growth function to model the situation. Then find the population after 6 years.

14) The population of a town is 2500 and is decreasing at a rate of 3% per year. Write an exponential decay function to model the situation. Then find the population after 5 years.

15) The value of a company's equipment is $25,000 and decreases at a rate of 15% per year. Write an exponential decay function to model the situation. Then find the population after 8 years.

16) Write a compound interest function to model $50,000 invested at a rate of 3% compounded monthly. Then find the balance after 3 years.

17) Write a compound interest function to model $43,000 invested at a rate of 5% compounded annually. Then find the balance after 3 years.

18) Write a compound interest function to model $65,000 invested at a rate of 6% compounded quarterly. Then find the balance after 12 years.

Tell whether each set of ordered pairs satisfies an exponential function. Explain your answer.

19) {(2, 4), (4, 8), (6, 16), (8, 32)}

20) {(−2, 5), (−1, 10), (0, 15), (1, 20)}

Look for a pattern in each data set to determine which one is linear, quadratic, or exponential model.

21) {(−5, 9), (−4, 0), (−3, −7), (−2, −12)}

22) {(−2, 9), (−1, 13), (0, 17), (1, 21)}

23) {(1, 4), (2, 6), (3, 9), (4, 13.5)}

24) {(0, 4), (2, 12), (4, 36), (6, 76)}

Graph the following exponential functions.

25) $y = 5\left(2\right)^x$

26) $y = -2\left(3\right)^x$

27) $y = 3\left(\frac{1}{2}\right)^x$