Name: _____

Date: _____

TEST REVIEW Unit 6: L1-8

Simplify each of the following expressions without the use of negative or zero exponents.

1) $6x^0$	2) If the expression $(3x^4)^3$ was written in ax^b form, what is the sum of a and b?	3) $(-6ab^3)^3(2a^4)$	4) $\dfrac{30x^3y^4}{-5x^7y}$

For each of the following exponential functions identify the y-intercept and whether the function is increasing or decreasing.

5) $y=12(9.24)^x$	6) $y=-6(.25)^x$	7) $f(x)=55\left(\dfrac{8}{9}\right)^x$	8) $g(x)=(10)^x$
y-int:_____ increase or decrease?	y-int:_____ increase or decrease?	y-int:_____ increase or decrease?	y-int:_____ increase or decrease?

Find each of the following:

9) 15% of 780	10) 3.2% of 360	11) $2\dfrac{3}{4}$% of $1100
12) Increase 350 by 6.5%	13) Decrease $11,300 by 8%	14) Increase 1,368 by $2\dfrac{1}{2}$%

Determine if the table represents a linear or exponential function. Then, write its equation.

15)

x	1	2	3	4	5
y	-4	-1	2	5	8

Type: _____

Equation: _____

16)

x	-1	0	1	2	3
y	72	36	18	9	4.5

Type: _____

Equation: _____

17) Your savings account earns interest at a rate of 2.3% per year and starts with a balance of $225.

   a) Write an exponential equation that would give the account's worth, Y, as a function of the number of years, x, it has been gaining interest.

   b) Using your equation determine how much money you would have after 4 years?

18) Amy's bill at Applebee's cost $57. What is the total price of Amy's bill if she leaves an 18% tip on the meal?

19) A 180°F cup of tea is cooling down such that its temperature is decreasing at a constant rate of 5% per minute. Determine the temperature of the cup of tea, to the nearest degree, after 6 minutes.

20) Consider the following exponential function: $f(x) = 2\left(\dfrac{1}{2}\right)^x$

   a) Evaluate each of the following:

   $f(-3) =$

   $f(-2) =$

   $f(-1) =$

   $f(0) =$

   $f(1) =$

   $f(2) =$

   $f(3) =$

   b) Graph this function for the domain interval $-3 \le x \le 3$