Alg 2 Hwk #42 Sec 8-1 Preview Fall 2018 Name:

Use your textbook to answer some of these questions.

1. (a) The **general form** for an Exponential Function is:

(b) What are the allowed values for

x : a : b :

2. b is the **base** of this function. When $b > 1$ the equation $y = a \cdot b^x$ models _____

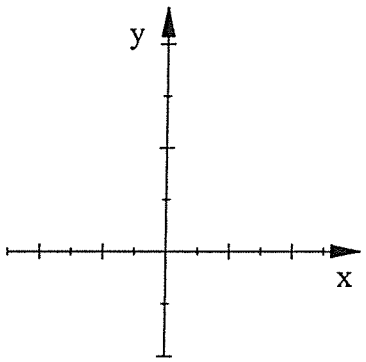
and b is called the _____

3. A) When the value of b is between 0 and 1, $0 < b < 1$,

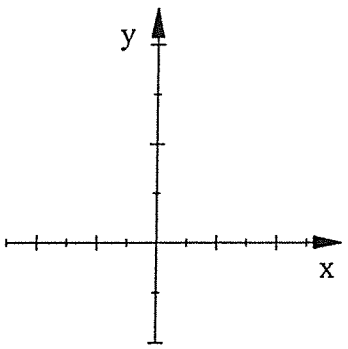
then the equation $y = a \cdot b^x$ models _____ and b is called the _____

4. Sketch an example of the graph for an exponential growth and an exponential decay function.

a) Exponential Growth Graph



b) Exponential Decay Graph



In a Real-Life situation the base of an exponential equation represents the percent you now have (as a decimal) **after** a given increase or decrease.

For example: If each year there is an 8% increase in price the base for this exponential equation is found by doing the following:

Step 1: Apply the percent change to everything you had before (100%). 100% + 8% = 108%

Step 2: Change this percent to its decimal form. 108%÷100 = 1.08

$\boxed{b = 1.08}$

Find the base of an exponential equation to model each percent change:

5. 20% rise in sales. $b =$

6. 1.03% decrease in value. $b =$

7. The number of cells doubles. $b =$

the last two problems are on the back.

8. At the end of 2017 your car was worth $12,500. By the end of 2018 the value of your car decreased 20%. Find the value of your car at the end of 2018. Round to the nearest hundredth.

9. At the end of 2010 the population of a city was 124,000. Each year saw a 2% increase in population. Find the population in 2011 and 2012 to the nearest whole number.