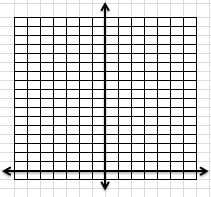
Pre-Calculus: 3.1 – 3.2 Review

Exponential and Logarithmic Functions and Models

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Hour: \_\_\_

1. Determine whether each of the functions are exponential growth, decay or not exponential. If it is growth or decay, find the percentage rate for the function. **(8 points)**
   1. Decay; 50%
   2. Not Exponential
   3. Growth; 100%
   4. Not Exponential
2. Choose a basic exponential **growth** function from number 1 and determine the following. **(12 points)**

Which Function:

* 1. Base:
  2. Initial Value:
  3. Asymptote(s):
  4. Domain:
  5. Range:

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* 1. Graph:

1. Compute the **exact value** of the function for the given x-value **without** using a calculator. **(8 points)**

Solution: \_\_\_\_\_\_\_\_\_\_\_

Solution: \_\_\_\_\_\_\_\_\_\_\_

Solution: \_\_\_\_\_\_\_\_\_\_\_

Solution: \_\_\_\_\_\_\_\_\_\_

1. Find the exponential function that satisfies the given conditions. **(8 points)**
   1. Initial value , increasing at a rate of per year.

Increasing:

Solution: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

* 1. Initial mass g, decreasing at a rate of every 4 days.

Decreasing:

Solution: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. The population of Fowlerville is and it is decreasing at a rate of per year*.*

a. Write an equation P(*t*) for the population at time t years from now. **(4 points)**

Decreasing:

Solution: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

b. Predict the population 7 years from now. **(2 points)**

Solution: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. The population of Burkeville in 1993 was 48,000. It is and growing at a rate of 3.2% per year.
   1. Write an equation for the exponential situation. **(4 points)**

Increasing:

Solution: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

* 1. When will the population be triple of the original amount? **(2 points)**

So, plug in into your calculator and find where the “y-value” approaches .

* It happens between and exactly .

Thus, years later. So, **.**

Solution: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Given the following points, determine the exponential equation. **(4 points)**

Square Root both Sides

Solution: \_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Determine exponential equation and based on values given in the following table.**(8 points)**

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