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. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
	2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
	3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
	4. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
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: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

|  |  |
| --- | --- |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |

* 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.

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

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

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)**

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)**

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

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

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

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

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

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

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |