**Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_ Class Period: \_\_\_\_\_\_**

**Algebra 2 6.4 – Graphing Logarithms**

Graph each function, then answer the questions below. Note: AROC = Average Rate of Change.

|  |  |  |
| --- | --- | --- |
| **1.** | **2.** | **3.** |
|  |  |  |
| **Domain:**  **Range:**  **x-intervals where :** | **x-intercept:**  **AROC on :**  **End Behavior:** | **Domain:**  **AROC on :**  **Asymptote:** |
| **4.** | **5.** | **6.** |
|  |  |  |
| **Range:**    **End Behavior:** | **Domain:**  **Range:**  **Asymptote:** | **Domain:**  **AROC on :**  **End Behavior:** |

**7.** Find the inverse of the functions below. Be sure to show work and use correct labels!

|  |  |  |
| --- | --- | --- |
| **a.** | **b.** | **c.** |

**8.** Write equations of logarithmic functions with base 4 for each of the descriptions below:

**a.** Reflected across the y-axis and vertically dilated by 3, then translated three units to the right and one unit up.

**b.** Reflected across the x-axis, translated left 2 units and down 5 units.

**\*c.** Passes through  with end behavior: as ,  and as , 