**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 , 