R.E.A.L. Math 1010 Supplemental Activity   Name: _____

Lab 4 Exponential and Logarithmic Graphs

(Adapted from MIA Instructor Resources)
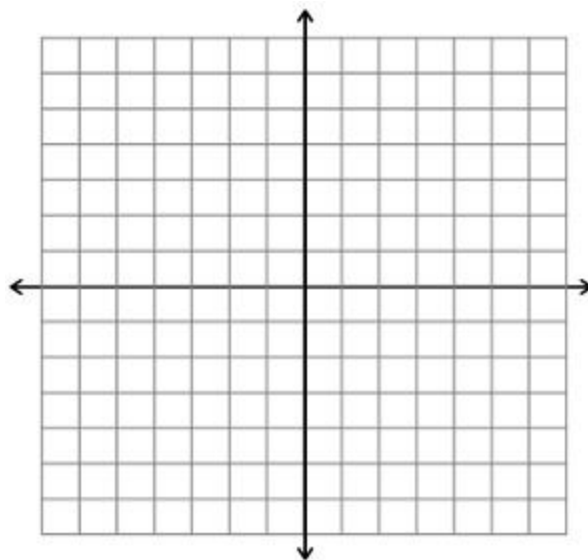
1. Make a table of values for each of the following functions and graph all of them on the coordinate plane to the right.

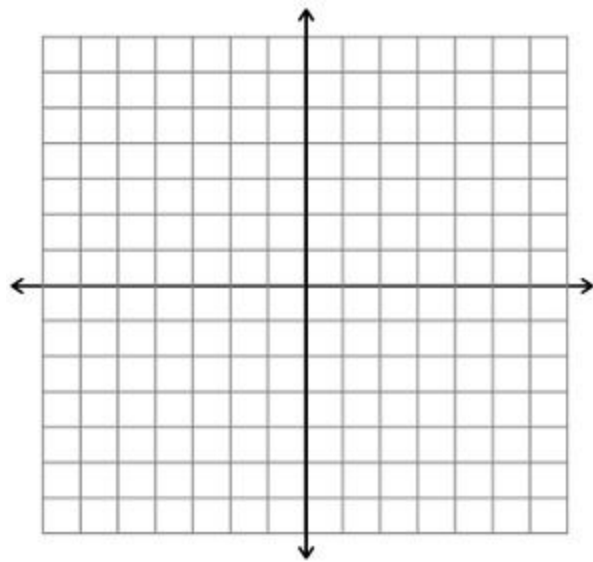   a. $f(x) = 2^x$

   b. $g(x) = e^x$

   c. $h(x) = 4^x$

2. As x increases, what happens to y?

3. As x decreases, what happens to y?

4. Will the value of y ever be equal to 0? Why or why not?

5. State the domain and range of each of the functions.

6. How are the graphs
   a. Similar?

   b. Different?

7. Make a table of values for each of the following functions and graph all of them on the coordinate plane to the right.

   a. $f(x) = \left(\frac{1}{2}\right)^x$

   b. $g(x) = \left(\frac{1}{4}\right)^x$

   c. $h(x) = \left(\frac{4}{5}\right)^x$

8. As x increases, what happens to y?

9. As x decreases, what happens to y?

10. Will the value of y ever be equal to 0? Why or why not?

11. State the domain and range of each of the functions.

12. How are the graphs
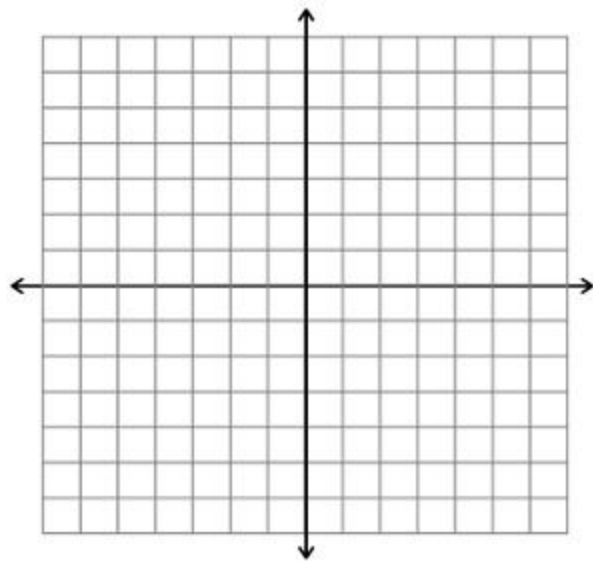   a. Similar?

    b. Different?

13. What point do all the graphs (#1 and #7) have in common? Explain why.

14. Make a table of values for each of the following functions and graph all of them on the coordinate plane to the right.

    a. $f(x) = x$

    b. $g(x) = 2^x$

    c. $h(x) = log_2 x$

15. Fold your paper along the line $f(x) = x$. What do you observe about the graphs of the other two functions?

16. Write the inverse function for $y = 4^x$

17. Write the inverse function for $h(x) = log_3 x$