Algebra 2 Unit 4 Name:_____
Embedded Assessment #2 Date:_____

1. **Reason quantitatively.** Tell whether or not each table contains data that can be modeled by an exponential function. Provide an equation to show the relationship between *x* and *y* for the sets of data that are exponential.

a.

x	*y*
0	1
1	2
2	4
3	8

b.

x	*y*
0	3
1	4
2	5
3	6

c.

x	*y*
0	48
1	24
2	12
3	6

2. Tell whether or not each function is increasing. State *increasing* or *decreasing*, and give the domain, range, and *y*-intercept of the function.

a. $y = -\left(\frac{1}{3}\right)^x$

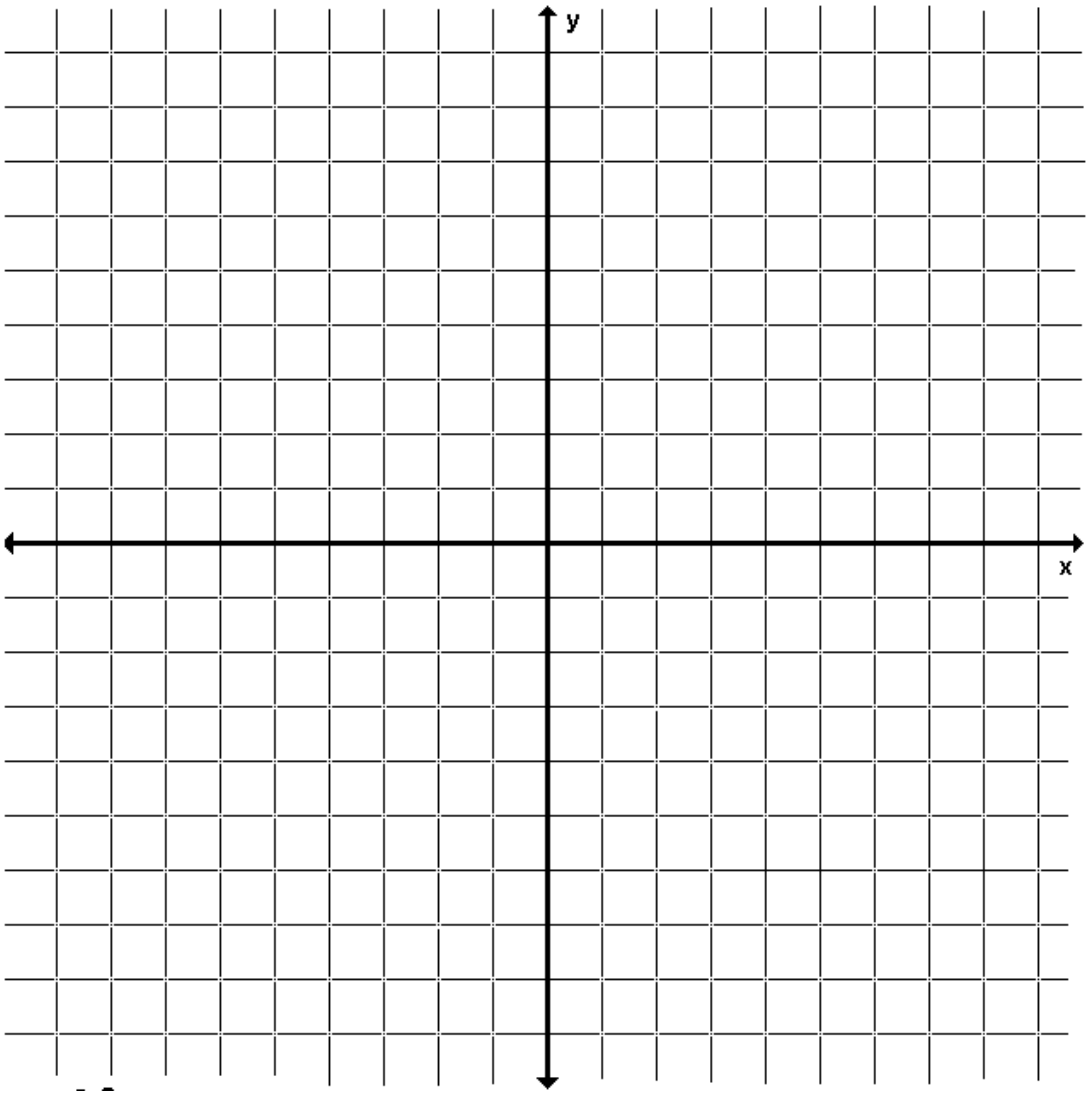
b. $y = 3(.5)^x$

c.

3. Let $g(x) = -3(2)^{x+1} - 2$

   a. Describe the function as a transformation of $f(x) = 2^x$

   b. Graph the function using your knowledge of transformations. (X and Y scale does not have to be the same)



4)Rewrite each exponential equation as a common logarithmic equation.

a. $10^3 = 1{,}000$ b.$10^{-2} = \frac{1}{100}$ c.$10^5 = 100{,}000$

5. Rewrite each logarithmic equation as an exponential equation.

a.$log 10{,}000 = 4$ b. $log 10 = 1$ c. $\log \frac{1}{100{,}000} = -5$

6.Convert to an exponential equation and evaluate

a. $log 100$ b.$log 1$ c. $log 4 + \log 25$

7. Rewrite each expression as a single logarithm

a. $log 3 + \log 7$ b. $2(log 2 + log 3)$ c. $log 2 + \log 25$

8. Simplify

$$\frac{(2x)^{-3}y^2z^{-1})}{(6xy)}$$