Name: _____

Algebra II

Exponential Functions and Log Review

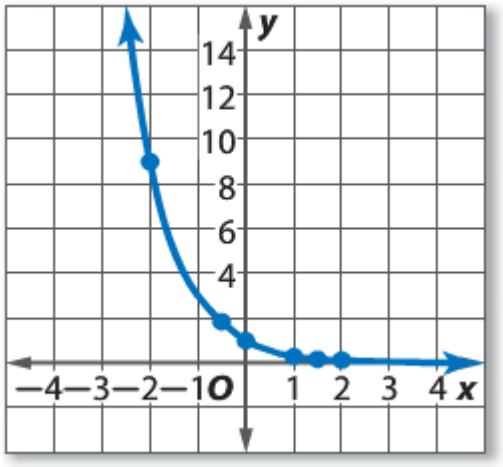
Directions: Answer all questions to the best of your ability. Show all of your work when completing a problem. You may use a calculator throughout this entire test.

1. In the following formula: $y = a(b)^{x-h} + k$, what shift is caused by the *h* and *k* variables?

h: _____

k: _____

2. Is the following graph growth or decay?



_____

3. Label each of the variables. (The formula: $y = a(b)^{x-h} + k$)

$$y = 2\left(\frac{1}{4}\right)^{x+2} - 3$$

a= _____

b= _____

h= _____

k= _____

4. Solve each equation.

   a. $2^x = 8^3$

   b. $9^{2x-1} = 3^{6x}$

5. Change the following from logarithmic form to exponential form.

   a. $\log_2 8 = 3$

   b. $\log_4 \frac{1}{256} = -4$

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6. Solve each of the following.

   a. $\log_{16} y = \frac{1}{2}$

   b. $\log_3 81 = x$

   c. $\log_3(x+5) = \log_3(3x-9)$

   d. $\log(x+2) + \log(3) = \log(4x) - \log(2)$

7. Use a calculator to evaluate each expression to the nearest **thousandth**.

   a. $\log 78 =$

   b. $\log 32 =$

   c. $e^5 =$

   d. $e^3 =$

8. Use your **calculator** and **graph** the following equation.

   a. $y = \log(x+2) - 3$

   b. $y = \log(x+1) - 2$