Algebra 2 Honors Name_____

Homework – Exponential Functions

1. Which of the following equations represent exponential growth? 1._____

I.	$y=\frac{1}{2}\left(\frac{11}{10}\right)^{-x}$
II.	$y=\frac{1}{4}\left(\frac{7}{3}\right)^{2x}$
III.	$y=3(4)^{-2x}$
IV.	$y=2\left(\frac{7}{4}\right)^{x}$

2. Describe the end behavior of the function $f(x)=\left(\frac{1}{4}\right)^{x-2}+3$. 2._____

a. as $x\to-\infty,\ f(x)\to+\infty$ and as $x\to+\infty,\ f(x)\to 3$
b. as $x\to-\infty,\ f(x)\to 3$ and as $x\to+\infty,\ f(x)\to+\infty$
c. as $x\to-\infty,\ f(x)\to-\infty$ and as $x\to+\infty,\ f(x)\to+\infty$
d. as $x\to-\infty,\ f(x)\to 2$ and as $x\to+\infty,\ f(x)\to+\infty$

3. When evaluating the function $f(x)=2\cdot 3^{x+1}-5$ for any real number x, what must be true about the value of $f(x)$? 3._____

a. The value of $f(x)$ is always greater than -1
b. The value of $f(x)$ is always greater than -5
c. The value of $f(x)$ is always positive
d. The value of $f(x)$ is always negative

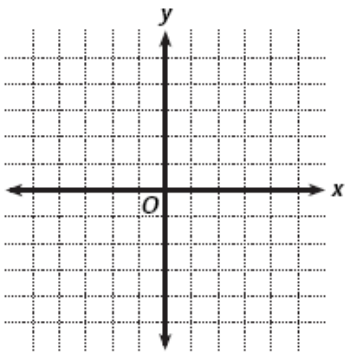
For questions 4 - 5, graph the following exponential graphs without using a graphing calculator.

4. $y=2(3)^{x-2}+3$

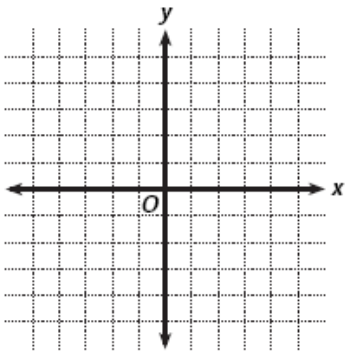
4. H.A.:

End Behavior:

Starting Pt:



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



5. H.A.:

End Behavior:

Starting Pt.:

6. The graph of which function is stretched vertically by a factor of five and translated three units left from the graph of the parent function. 6._____

a. $y = 5^{x-3}$

b. $y = 5(4)^{x-3}$

c. $y = 5^{x+3}$

d. $y = 5(2)^{x+3}$

7. The graph of which function is stretched vertically by a factor of seven and translated two units right and three units up from the graph of the parent function. 7._____

a. $y = 7^{x+2} + 3$

b. $y = 7(4)^{x-2} - 3$

c. $y = 7(4)^{x-2} + 3$

d. $y = 7^{x+2} - 3$