Name: _____ Period: _____

Score:
_____/_____
_____%

HW 4-3 HONORS: More Graphs with Vertical Shifts

Instructions:

a) Complete the table of values
b) Graph. Make sure you label your graph and asymptote.
c) Identify the *y*-intercept and asymptote for each graph.

1) $f(x) = 2^x + 3$

x	y
- 2	
- 1	
0	
1	
2	

y-intercept: _____
asymptote: _____

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

x	y
- 2	
- 1	
0	
1	
2	

y-intercept: _____
asymptote: _____

3) $f(x) = 4(3)^x + 1$

x	y
- 2	
- 1	
0	
1	
2	

y-intercept: _____
asymptote: _____

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

x	y
- 2	
- 1	
0	
1	
2	

y-intercept: _____
asymptote: _____

5) $f(x) = -4\left(\frac{1}{9}\right)^x$

x	y
- 2	
- 1	
0	
1	
2	

y-intercept: _____
asymptote: _____

6) $y = 7\left(\frac{1}{4}\right)^x + 2$

x	y
- 2	
- 1	
0	
1	
2	

y-intercept: _____
asymptote: _____

For each problem you are given the parent function $f(x)$ and a second function $g(x)$ that has been shifted vertically.

a) Create a table for both $f(x)$ and $g(x)$ on graph paper.

b) Graph both $f(x)$ and $g(x)$ on the same graph. Use graph paper. Make sure to label your axis and draw the asymptotes.

c) Answer the questions below.

7)

$f(x) = 5^x$ and $g(x) = 5^x - 2$

What is the *y*-intercept?

$f(x)$: _____ $g(x)$: _____

Where is the asymptote?

$f(x)$: _____ $g(x)$: _____

Are these functions increasing or decreasing?

Are these functions above or below the asymptote?

For each problem you are given the parent function $f(x)$ and a second function $g(x)$ that has been shifted vertically.

a) Create a table for both $f(x)$ and $g(x)$ on graph paper.

b) Graph both $f(x)$ and $g(x)$ on the same graph. Use graph paper. Make sure to label your axis and draw the asymptotes.

c) Answer the questions below.

8)

$f(x)=\left(\frac{1}{4}\right)^x$ and $g(x)=\left(\frac{1}{4}\right)^x-1$

What is the *y*-intercept?

$f(x)$: _____ $g(x)$: _____

Where is the asymptote?

$f(x)$: _____ $g(x)$: _____

Are these functions increasing or decreasing?

Are these functions above or below the asymptote?

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9)

$f(x)=\left(\frac{1}{5}\right)^x$ and $g(x)=\left(\frac{1}{5}\right)^x+1$

What is the *y*-intercept?

$f(x)$: _____ $g(x)$: _____

Where is the asymptote?

$f(x)$: _____ $g(x)$: _____

Are these functions increasing or decreasing?

Are these functions above or below the asymptote?

For each problem you are given the parent function $f(x)$ and a second function $g(x)$ that has been shifted vertically.

a) Create a table for both $f(x)$ and $g(x)$ on graph paper.

b) Graph both $f(x)$ and $g(x)$ on the same graph. Use graph paper. Make sure to label your axis and draw the asymptotes.

c) Answer the questions below.

10)

$f(x)=-(8)^x$ and $g(x)=-(8)^x+4$

What is the *y*-intercept?

$f(x)$: _____ $g(x)$: _____

Where is the asymptote?

$f(x)$: _____ $g(x)$: _____

Are these functions increasing or decreasing?

Are these functions above or below the asymptote?

Identify the *y*-intercept and asymptote of the function, without graphing.

11) $f(x)=-(6)^x-4$

y-intercept: _____
asymptote: _____

12) $f(x)=-5(2)^x+3$

y-intercept: _____
asymptote: _____

13) $g(x)=4^x+15$

y-intercept: _____
asymptote: _____

14) $y=-8(15)^x+10$

y-intercept: _____
asymptote: _____

15) $y=6(3)^x-1$

y-intercept: _____
asymptote: _____

16) $y=5(6)^x+2$

y-intercept: _____
asymptote: _____

17) $h(x)=-\frac{1}{3}(2)^x-7$

y-intercept: _____
asymptote: _____

18) $y=27(4)^x-14$

y-intercept: _____
asymptote: _____