Name:_____ Date:_____

M12P HW Section 7.2 Graphing Exponential Functions:

$$y = A \times B^{k(x-C)} + D$$

1. What transformation does the constants "A", "B", "C" and "D" perform on an exponential function? Explain:

2. What should the value of the constant "k" be equal to in an exponential equation? Explain:

3. What happens in an exponential function if the base "B" is negative? Explain:

4. What happens to the base of an exponential function if the exponent is negative?

5. How do you tell if an exponential function is "increasing" or "decreasing"? explain:

6. How do you tell if an exponential function is opening UP or DOWN? Explain:

7. What is the difference between "Increasing/decreasing" and "opening UP/DOWN" ? Explain:

8. For each exponential function below, indicate the values of "A", "B", "C" and "D". Then indicate whether if the function opens UP or Down and "increasing" or decreasing. Indicate the equation of the horizontal asymptote, domain, and range. Then graph the function with the grid provided:

a) $y = 3 \times 2^{x-2} + 5$

A = *B=* *C=* *D=*

OPENS: UP or DOWN INCREASING or DECREASING

EQN H.A.:

Domain: RANGE:

b) $y = -2 \times \left(\frac{1}{6}\right)^{x+11} + 17$

A = *B=* *C=* *D=*

OPENS: UP or DOWN INCREASING or DECREASING

EQN H.A.:

Domain: RANGE:

c) $y = \frac{2}{3} \times 8^{\frac{1}{3}x+2} - 3$

A = *B=* *C=* *D=*

OPENS: UP or DOWN INCREASING or DECREASING

EQN H.A.:

Domain: RANGE:

d) $y = 6 \times 9^{0.5x+1} - 4$

A = *B=* *C=* *D=*

OPENS: UP or DOWN INCREASING or DECREASING

EQN H.A.:

Domain: RANGE:

e) $y=\frac{4}{3}\left(\frac{1}{10}\right)^{x+5}-3$

A = *B=* *C=* *D=*

OPENS: UP or DOWN INCREASING or DECREASING

EQN H.A.:

Domain: RANGE:

f) $y=-\frac{4}{3}\left(\frac{2}{3}\right)^{7-x}+11$

A = *B=* *C=* *D=*

OPENS: UP or DOWN INCREASING or DECREASING

EQN H.A.:

Domain: RANGE:

g) $y=8\left(\frac{5}{4}\right)^{9-3x}-2$

A = *B=* *C=* *D=*

OPENS: UP or DOWN INCREASING or DECREASING

EQN H.A.:

Domain: RANGE:

h) $y=-\frac{5}{6}\left(\frac{2}{5}\right)^{3-0.5x}+2$

A = *B=* *C=* *D=*

OPENS: UP or DOWN INCREASING or DECREASING

EQN H.A.:

Domain: RANGE:

9. Given the equation, complete the table of values. Show all your work and steps:

a) $y = 3\times(8)^{x-3} + 2$

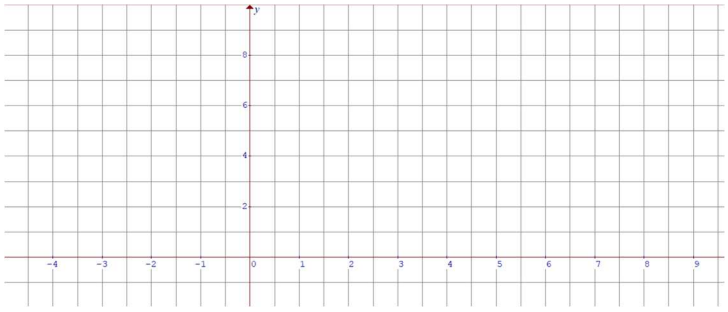
x	y
2	
1	
0	
-1	
-3	

b) $y = -4\times\left(\frac{2}{3}\right)^{2-3x} + 7$

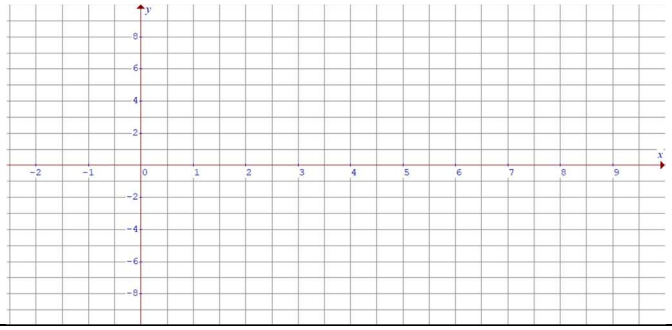
x	y
0	
1	
2	
-2	
5	

10. Graph the function with the grid provided. Indicate the equation of the asymptotes, domain, and range:

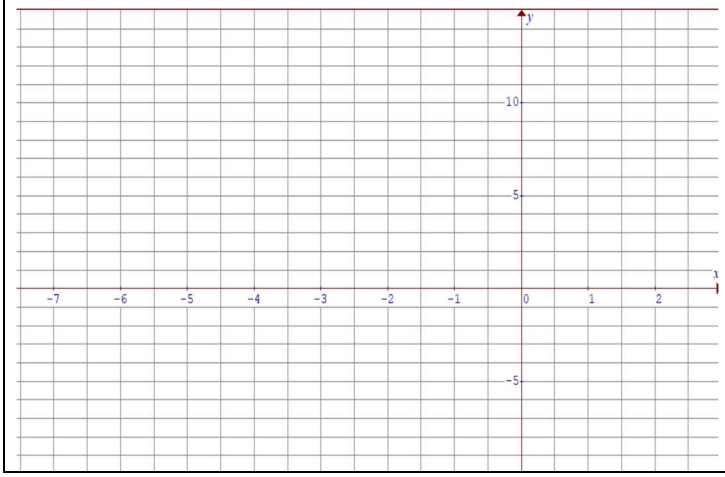
a) $y = 3(4)^{x-4} + 1$



b) $y = -4(0.5)^{x-4} + 7$



c) $y = 2(4)^{0.5x+1} - 4$



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