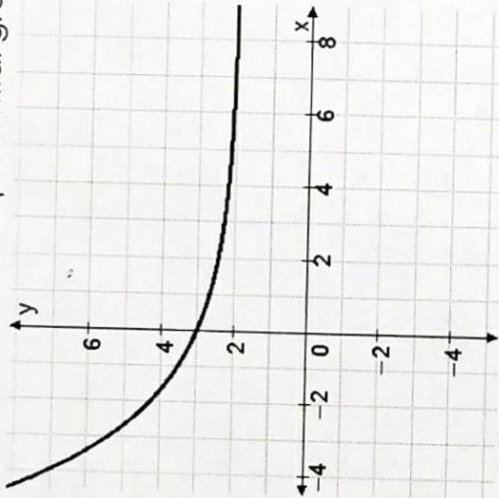


Name: \_\_\_\_\_

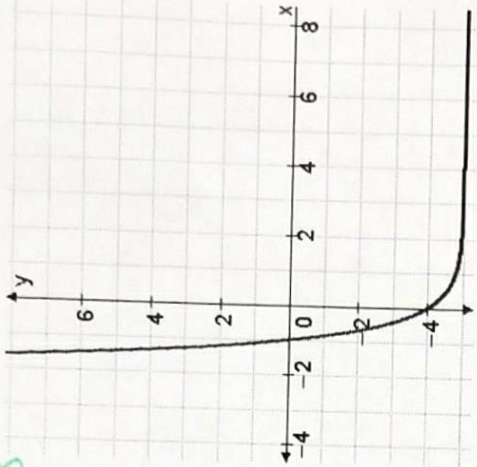
Date: \_\_\_\_\_

### Exponential graphing!

- 1) Domain:  $(-\infty, \infty)$   
 Range:  $(2, \infty)$   
 X-intercept: None  
 Y-intercept:  $(0, 3)$   
 Increasing or Decreasing: Increasing  
 Growth or Decay: Decay  
 Asymptote:  $y = 2$   
 End Behavior  
 As  $x \rightarrow -\infty, y \rightarrow \infty$   
 As  $x \rightarrow \infty, y \rightarrow 2$



- 2) Domain: All Real Numbers  
 Range:  $(-5, \infty)$   
 Zero:  $(-1, 0)$   
 y-intercept:  $(0, -4)$   
 Increasing or Decreasing? Increasing  
 Growth or Decay: Decay  
 Asymptote:  $y = -5$   
 End Behavior  
 As  $x \rightarrow -\infty, y \rightarrow \infty$   
 As  $x \rightarrow \infty, y \rightarrow -5$



- 3)  $y = \frac{1}{4}(6)^{x-1} - 3$   
 Stretch or Shrink? SHRINK  
 By how much?  $\frac{1}{4}$   
 Growth or Decay? GROWTH  
 Reflection or no Reflection? NO  
 Horizontal Shift? RIGHT 1  
 Vertical Shift? DOWN 3  
 Asymptote?  $y = -3$   
 y-intercept?  $(0, -2.96)$

- 4)  $y = -4\left(\frac{2}{3}\right)^x + 5$   
 Stretch or Shrink? STRETCH  
 By how much? 4  
 Growth or Decay? DECAY  
 Reflection or no Reflection? REFLECTION  
 Horizontal Shift? none  
 Vertical Shift? UP 5  
 Asymptote?  $y = 5$

- 5)  $y = \frac{1}{2}\left(\frac{3}{4}\right)^{x-7}$   
 Stretch or Shrink? SHRINK  
 By how much?  $\frac{1}{2}$   
 Growth or Decay? DECAY  
 Reflection or no Reflection? NO  
 Horizontal Shift? RIGHT 7  
 Vertical Shift? none  
 Asymptote?  $y = 0$   
 Y-intercept?  $(0, 3.75)$

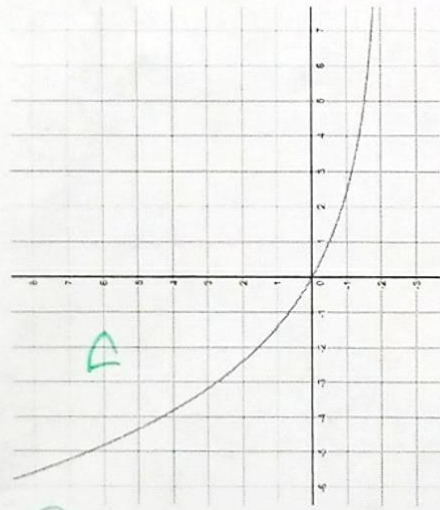
6) What is the equation of the graph?

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

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

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

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



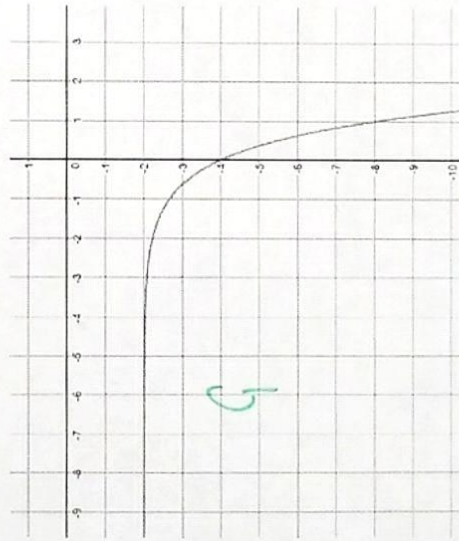
7) What is the equation of the graph?

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

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

C.  $y = 2(3)^x - 2$

D.  $y = -2(3)^x - 2$



8) Describe the transformations of how  $f(x) = 5^x$  would change into  $f(x) = 5^x + 1$

IT went up 1

9) How is the graph  $f(x) = \frac{1}{2}^x$  would change into

$f(x) = \frac{1}{2}^{x-5}$

RIGHT 5

10) What is the y-intercept of  $y = \frac{1}{2}(2)^x - 6$ ?

$\frac{1}{2}(2)^0 - 6$  (0, -5.5)

11) Write the equation of a function that is a decay with a base of  $\frac{2}{3}$  a asymptote of 4 and a right shift of 3.

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

12) What would be the equation of an exponential function that is a reflected growth function by a base of 3 that is shifted up 5 and right 2?

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