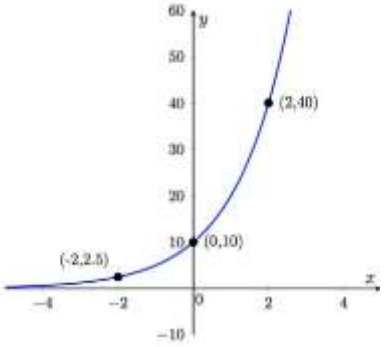
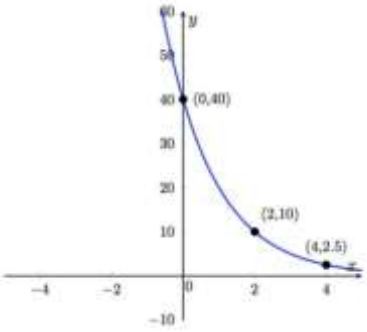
Exponential Functions Homework Day 4 **Name**_____

Write an exponential function for each of the four graphs.

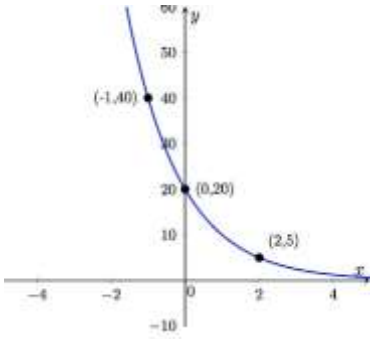
1.



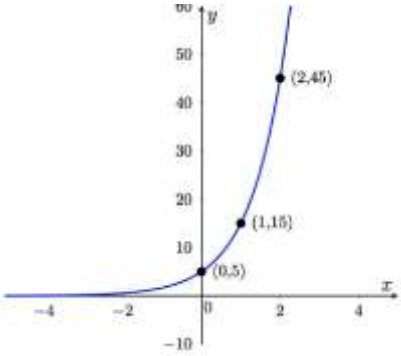
2.



3.



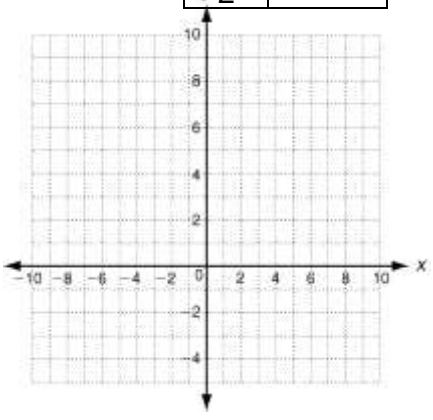
4.



Graph each exponential function.

5. $y = 5(2)^x$

x	y
-2	
-1	
0	
1	
2	



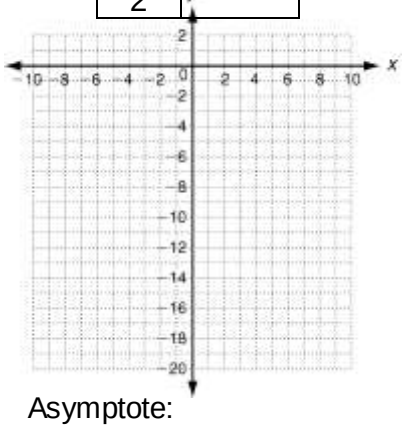
Asymptote:

Domain:

Range:

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

x	y
-2	
-1	
0	
1	
2	



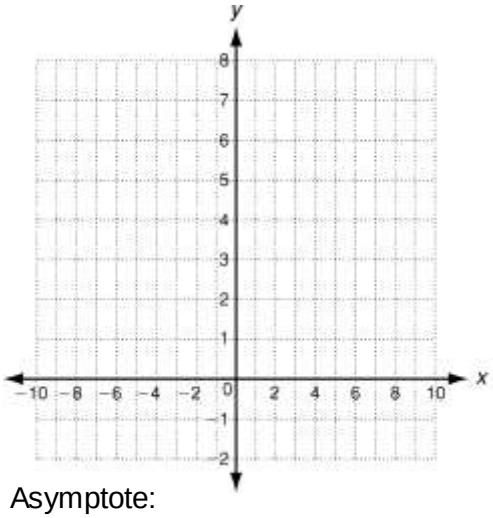
Asymptote:

Domain:

Range:

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

x	y
-2	
-1	
0	
1	
2	



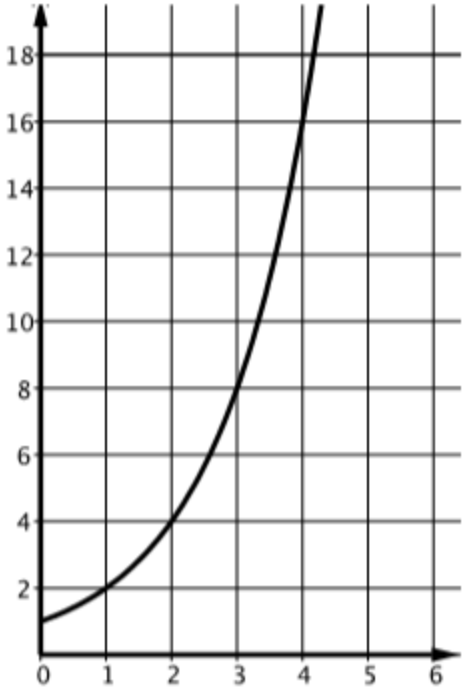
Asymptote:

Domain:

Range:

Comparing Linear and Exponential Functions: Rate of Change

Ash catches Pokemon at a different rate from Misty. The amount of Pokemon Ash has caught on day *n* is given by the equation $A(n) = 4n$. The graph below M(n), shows the number of Pokemon Misty has caught on day n.



1) What is the rate of change (slope) for Ash's function? What does this mean in context?

2) What is the average rate of change for Misty's function over the interval $1 \leq x \leq 3$. What does this represent in context?

3) Determine the average rate of change for Misty's function on the interval $3 \leq x \leq 5$. Why might it be different on this interval?

5.) Which person's number of Pokemon is increasing more rapidly over time? Justify your answer.