

Name: _____ Algebra 10 Unit 6 Lesson 4

Exponential Functions

DO NOW ~ Wednesday 10/2

Is the following equation exponential growth or decay?

$$f(x) = 125(1.5)^x$$

What is the starting amount?

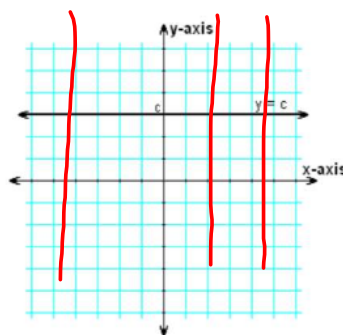
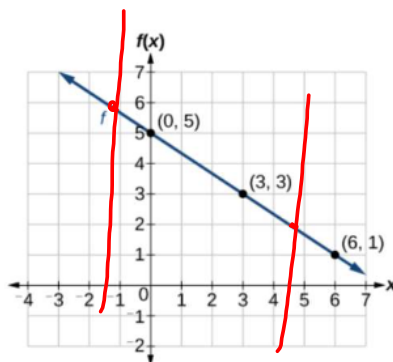
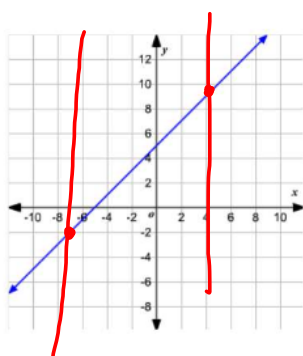
Growth

125



Classwork

Remember what LINEAR FUNCTIONS look like from Algebra 9...

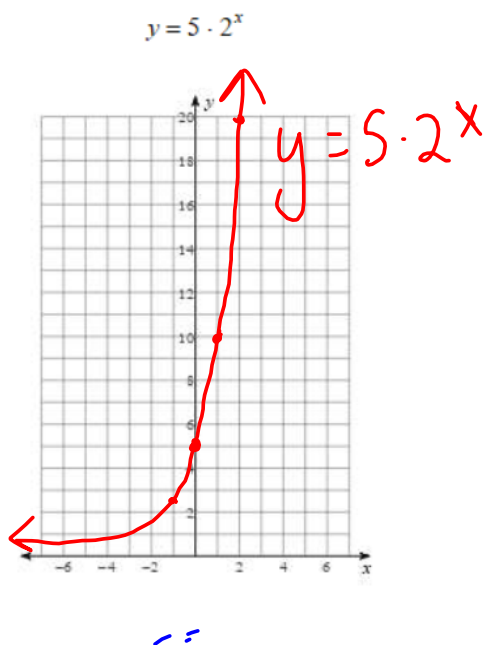


Linear equations look like this...

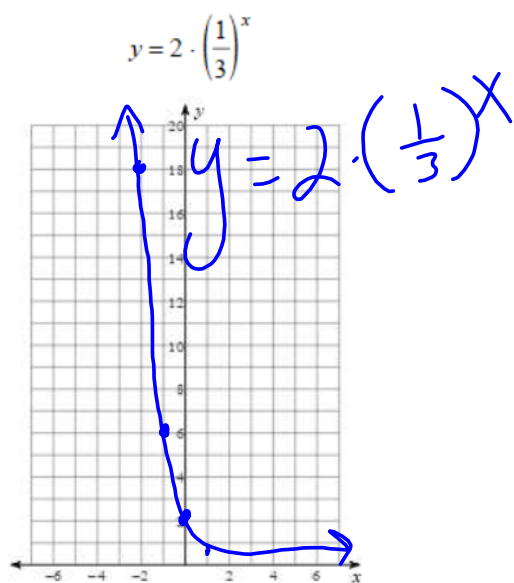
$$y = 2x + 5$$

Continue onto the next page.

Now we will be graphing exponential functions using the table and label method.



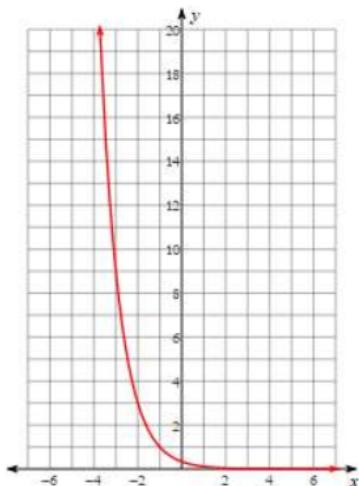
x	y
0	5
1	10
2	20
-1	2.5



x	y
0	2
-1	6
-2	18
1	$\frac{2}{3}$

DO NOW ~ Thursday 10/3

Identify whether or not the following function is exponential growth or decay.



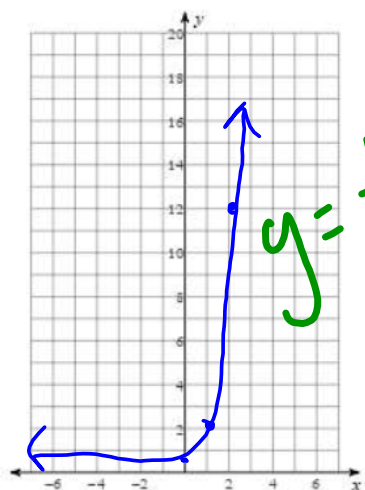
Decay



Classwork

Graph the following exponential function using the table and label method.

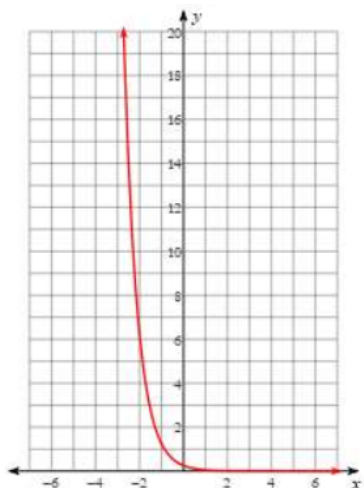
$$y = \frac{1}{3} \cdot 6^x$$



x	y
1	2
2	12
0	$\frac{1}{3}$

DO NOW ~ Friday 10/4

Identify whether or not the following function is exponential growth or decay.



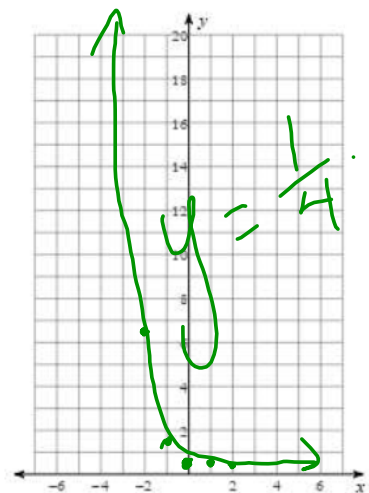
Decay



Classwork

Graph the following exponential function using the table and label method.

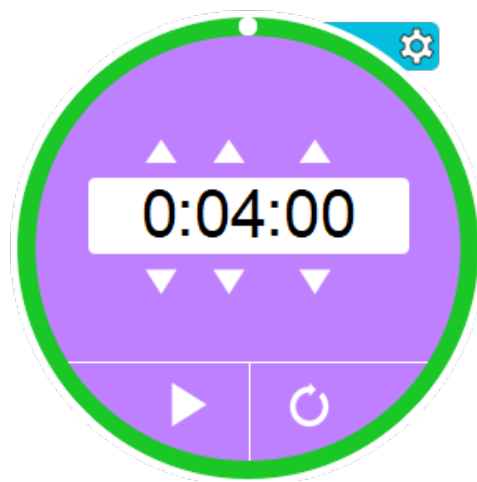
$$y = \frac{1}{4} \cdot \left(\frac{1}{5}\right)^x$$



x	y
0	.25
1	.05
2	.01
-1	1.25
-2	6.25

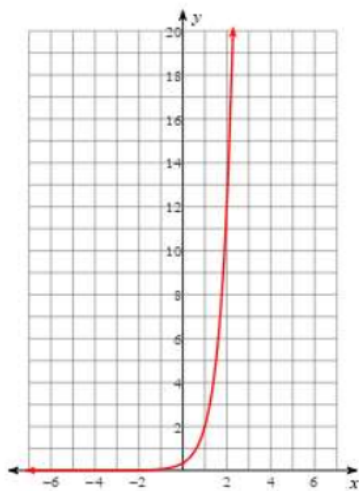
To earn your full participation point for the Do Now be sure to have completed all of the following by the time is up:

- 1) Be in your seat
- 2) Take out your calculator
- 3) Have last night's homework out
- 4) Complete the do now



DO NOW ~ Monday 10/7

Identify whether or not the following function is exponential growth or decay.



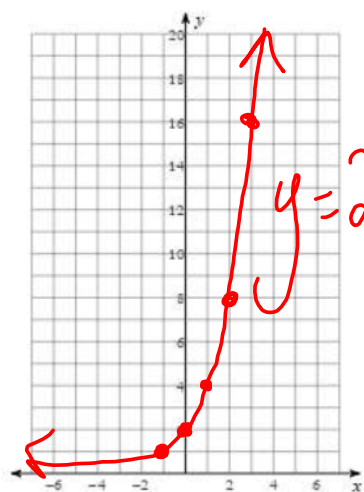
Growth



Classwork

Graph the following exponential function using the table and label method.

$$y = 2 \cdot 2^x$$

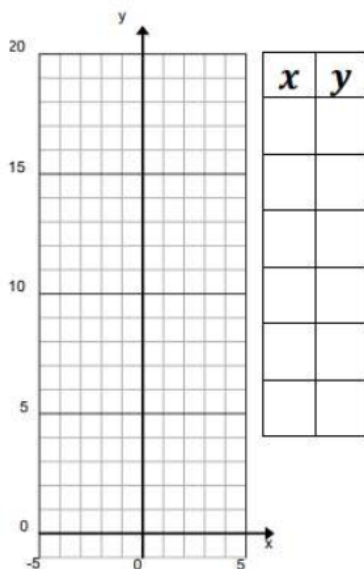


x	y
0	2
1	4
2	8
3	16
-1	1

Mrs. Ferreri's Station ~ Graphing Exponential Functions

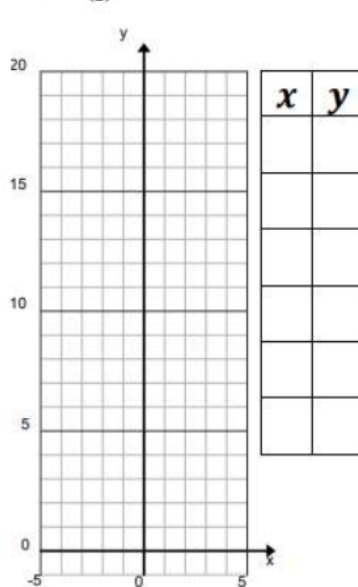
Graphing Exponential Functions $y = a \cdot b^x$

1. $y = 4^x$



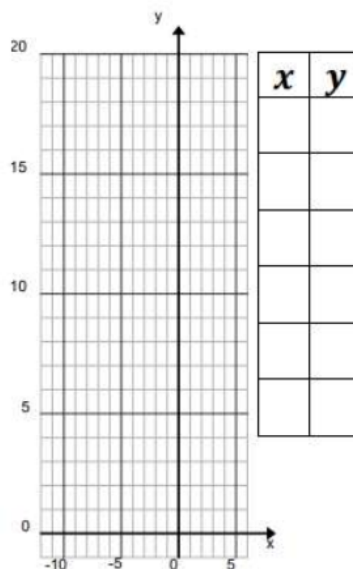
Growth or Decay?

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



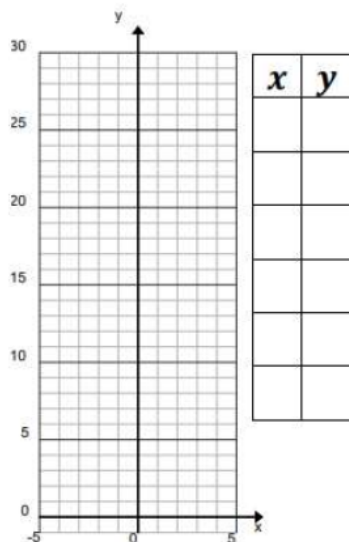
Growth or Decay?

3. $y = 0.75^x$



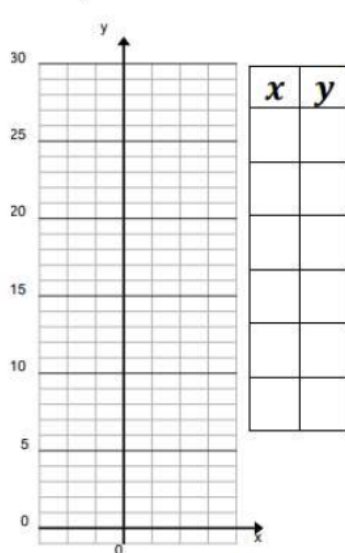
Growth or Decay?

4. $y = 3 \cdot 2^x$



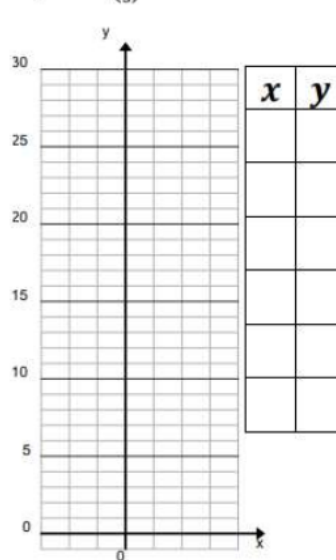
Growth or Decay?

5. $y = \frac{2}{3} \cdot 3^x$



Growth or Decay?

6. $y = 6 \cdot \left(\frac{1}{3}\right)^x$



Growth or Decay?

Computer Station ~ Delta Math

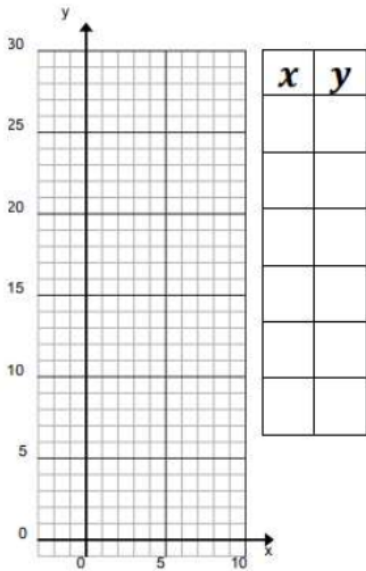
Log into Delta Math, complete the "Exponential Growth and Decay" assignment.

****This assignment will be part of your Quarter 1 grade!**

Mrs. Kennedy’s Station ~ Graphing Exponential Functions

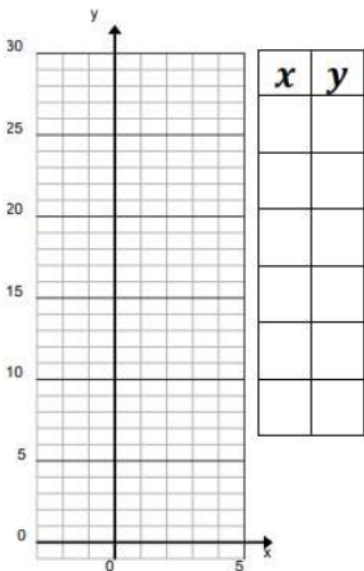
Graphing Exponential Functions $y = a \cdot b^x$

7. $y = 1.5^x$



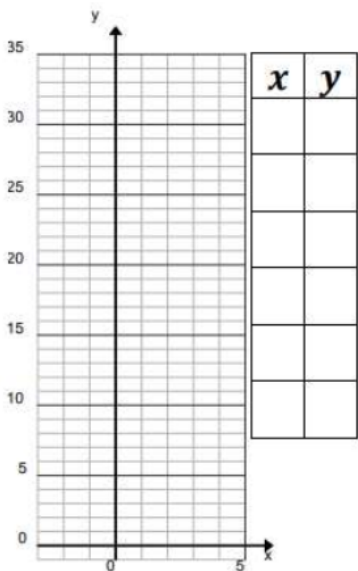
Growth or Decay?

8. $y = \frac{1}{3} \cdot 3^x$



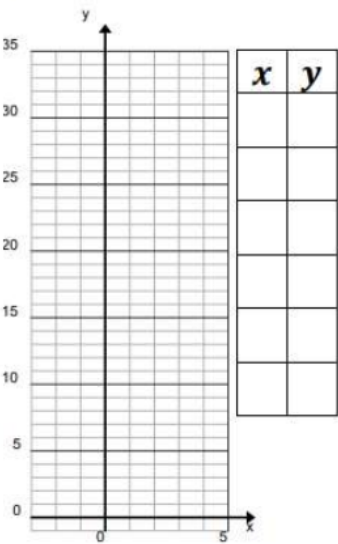
Growth or Decay?

9. $y = 5 \cdot \left(\frac{2}{5}\right)^x$



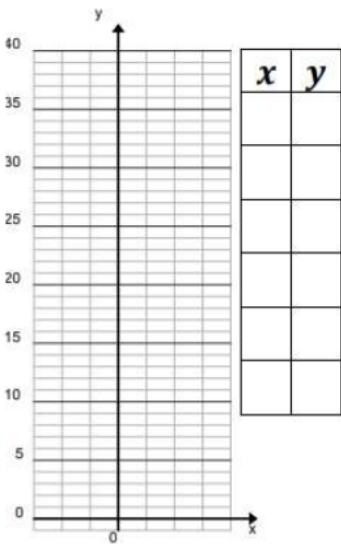
Growth or Decay?

10. $y = 3^x$



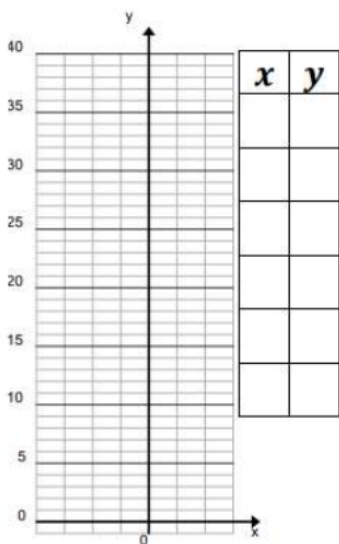
Growth or Decay?

11. $y = \left(\frac{1}{2}\right) \cdot 4^x$



Growth or Decay?

12. $y = \left(\frac{1}{2}\right) \cdot \left(\frac{1}{4}\right)^x$

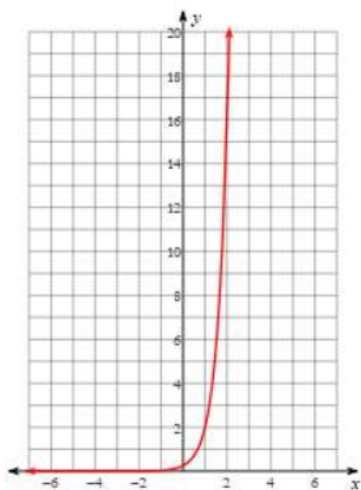


Growth or Decay?

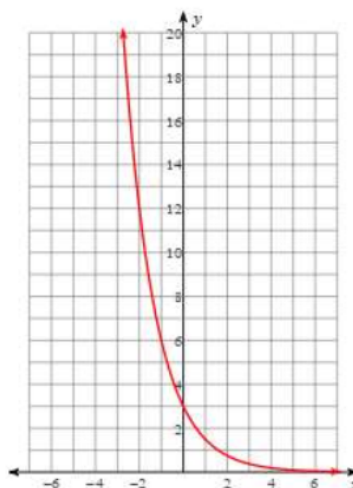
Name: _____ Unit 6 Graded Classwork

Determine whether or not the following graphs are exponential growth or decay. You may just write "growth" or "decay" next to each graph.

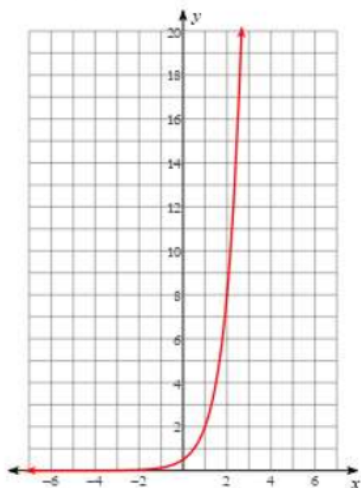
1) $y = \frac{1}{4} \cdot 8^x$



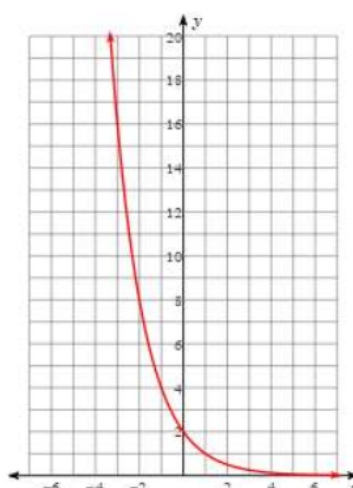
2) $y = 3 \cdot \left(\frac{1}{2}\right)^x$



3) $y = \frac{1}{2} \cdot 4^x$



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



Continue onto the back.

Answer the following questions showing all of your work.

You buy a new car for \$35,000. Its value increases 5% per year. What is its value after 5 years when you want to trade it in? (Round to the nearest cent.)

Your baby sister has an ear infection. The doctor said there are probably 10,000,000 bacteria in her ear. The penicillin the doctor prescribed will kill 8% of the bacteria per hour. How many bacteria will be left in your sister's ear after 6 hours?

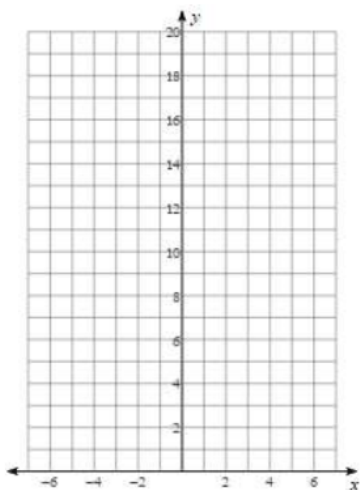
Mrs. Kennedy purchased artwork for \$1500 in 2015. The value of the artwork increases by 4% each year. How much will the artwork be worth in 7 years?

Todd purchased a house for \$150,000 in 2000. The value of the house increases by 3% each year. How much will the house be worth in 30 years?

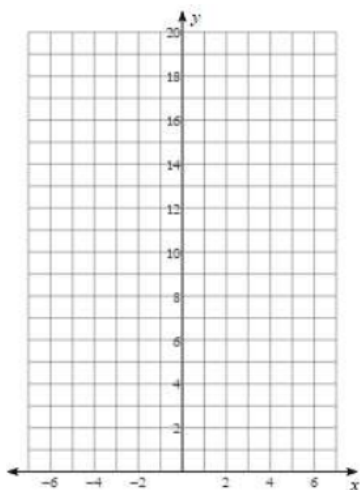
Homework ~ Wednesday 10/2

Graph the following functions using the table and label method.

$$y = 3 \cdot 2^x$$



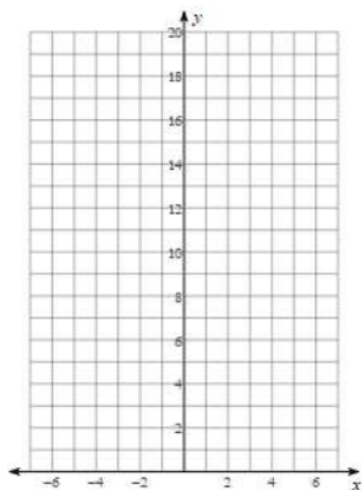
$$y = 2 \cdot \left(\frac{1}{2}\right)^x$$



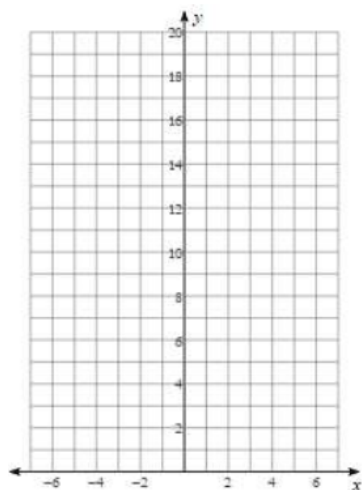
Homework ~ Thursday 10/3

Graph the following functions using the table and label method.

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



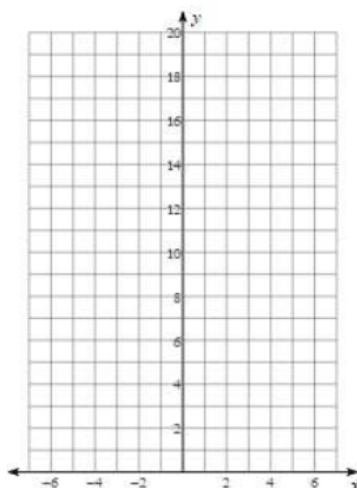
$$y = \frac{1}{3} \cdot 2^x$$



Homework ~ Monday 10/7

Graph the following functions using the table and label method.

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



$$y = \frac{1}{2} \cdot 3^x$$

