

READY, SET, GO!
Name \_\_\_\_\_
Period \_\_\_\_\_
Date \_\_\_\_\_

**READY**

Topic: Comparing rates of change in both linear and exponential situations.

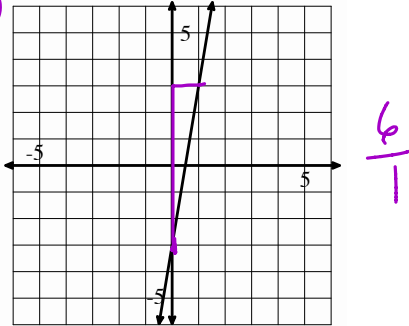
Identify whether situation "a" or situation "b" has a greater rate of change.

1. a.

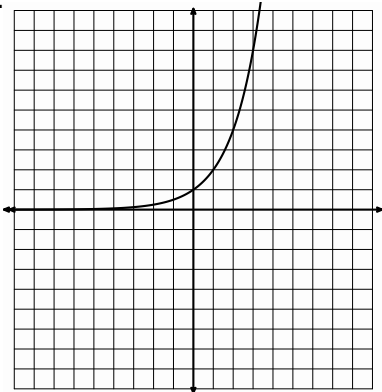
x	y
-10	-48
-9	-43
-8	-38
-7	-33

$\left. \begin{matrix} +1 \\ +1 \\ +1 \end{matrix} \right\} +5$   
 $\frac{5}{1}$

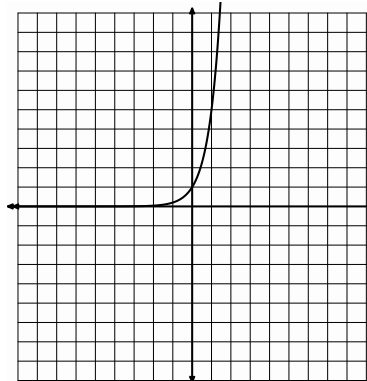
b.



2. a.



b.



3. a. Lee has \$25 withheld each week from his salary to pay for his subway pass. -25

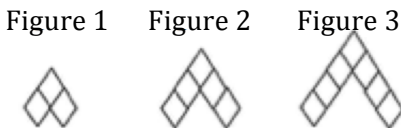
b. Jose owes his brother \$50. He has promised to pay half of what he owes each week until the debt is paid.

0	50	$(\frac{1}{2})$
1	25	
2	12.50	
3	6.25	

4. a.

x	6	10	14	18
y	13	15	17	19

b. The number of rhombi in each shape.



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

b. In the children's book, *The Magic Pot*, every time you put one object into the pot, two of the same object come out. Imagine that you have 5 magic pots.

**SET**

Topic: Recognizing linear and exponential functions.

**Based on each of the given representations of a function determine if it is linear, exponential or neither.**

6. The population of a town is decreasing at a rate of 1.5% per year.

7. Joan earns a salary of \$30,000 per year plus a 4.25% commission on sales.

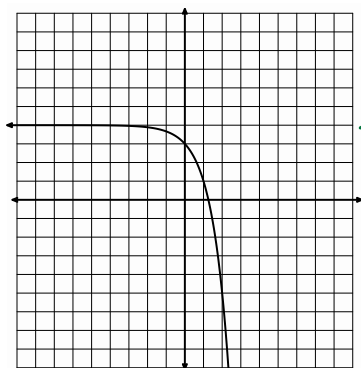
*Neither 30,000 + .0425(sales)*

8.  $3x + 4y = -3$

9. The number of gifts received each day of "The 12 Days of Christmas" as a function of the day. ("On the 4<sup>th</sup> day of Christmas my true love gave to me, 4 calling birds, 3 French hens, 2 turtledoves, and a partridge in a pear tree.")

11.

10.



*Exponential*

Side of a square	Area of a square
1 inch	1 in <sup>2</sup>
2 inches	4 in <sup>2</sup>
3 inches	9 in <sup>2</sup>
4 inches	16 in <sup>2</sup>

**GO**

Topic: Geometric means

**For each geometric sequence below, find the missing terms in the sequence.**

12.

x	1	2	3	4	5
y	2				162

13.

x	1	2	3	4	5
y	1/9		1	-3	9

*(-3) (-3)*

*-3 ÷ 1/9  
 -3 · 9 = -27  
 3√-27 = -3*

14.

x	1	2	3	4	5
y	10				0.625

15.

x	1	2	3	4	5
y	g	$gz$	$gz^2$	$gz^3$	$gz^4$

$$\frac{gz^4}{z} = \sqrt[4]{z^4} = z$$

16.

x	1	2	3	4	5
y	-3				-243

Find the rate of change (slope) in each of the exercises below.

17.

x	g(x)
-5	11
-3	4
-2	0.5
0	-6.5

$$\frac{2(4 - 11)}{1(-3 - (-5))} = \frac{2(-7)}{1(2)} = -7$$

$$\frac{1(0.5 - 4)}{2(-2 - (-3))} = \frac{-3.5}{2(1)} = -3.5$$

$$\frac{2(-6.5 - 0.5)}{2(0 - (-2))} = \frac{-14}{4} = -3.5$$

18.

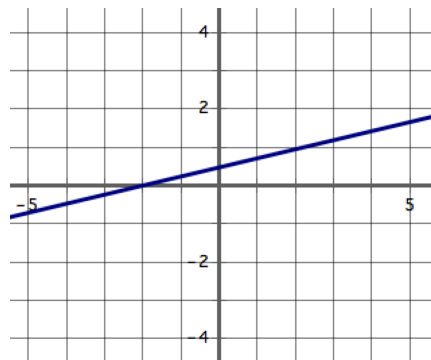
t	h(t)
3	13
8	23
18	43
23	53

19.

n	f(n)
-7	20
-5	24
-1	32
2	38

20. (2, 5) (8, 29)

21.



22. (-3, 7) (8, 29)  $m = \frac{y_2 - y_1}{x_2 - x_1}$

$$\frac{29 - 7}{8 - (-3)} = \frac{22}{11} = 2$$