

READY, SET, GO!

Name

Key

Period

Date

READY

Topic: Transforming lines

1. Graph the following linear equations on the grid. The equation $y = x$ has been graphed for you. For each new equation explain what the number 3 does to the graph of $y = x$. Pay attention to the y-intercept, the x-intercept, and the slope. Identify what changes in the graph and what stays the same.

a. $y = x + 3$

same slope
shifted up 3

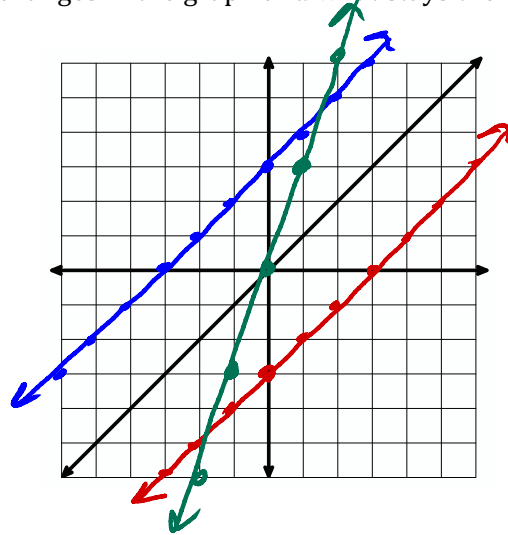
b. $y = x - 3$

same slope
shifted down 3

c. $y = 3x$

steeper
(vertically stretched by 3)

Same y-int



2. The graph of $y = x$ is given. (See figure 2.) For each equation predict what you think the number -2 will do to the graph. Then graph the equation.

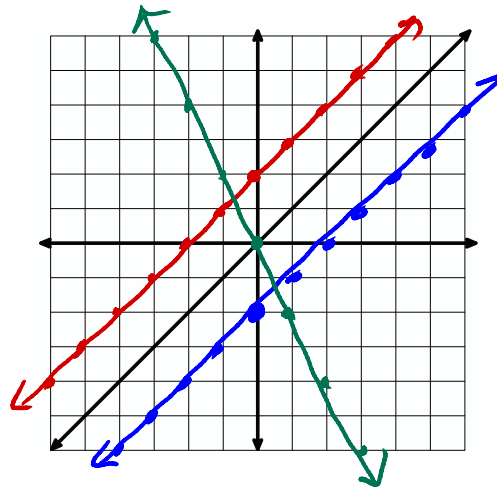
a. $y = x + (-2)$
Prediction:

$y = x - 2$

b. $y = x - (-2)$
Prediction:

$y = x + 2$

c. $y = -2x$
Prediction:



SET

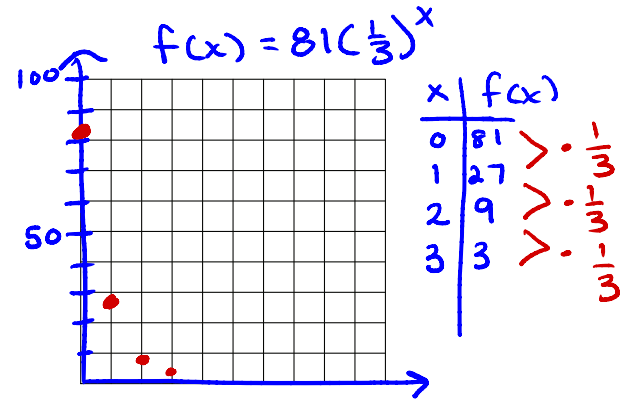
Topic: Distinguish between linear, exponential and quadratic functions

For each relation given:

- Identify whether or not the relation is a function. (If it's not a function, skip b - d.)
- Determine if the function is Linear, Exponential, Quadratic or Neither.
- Describe the type of growth.
- Express the relation in the indicated form.

3. I had 81 freckles on my nose before I began using vanishing cream. After the first week I had 27, the next week 9, then 3 ...

- Function? **yes**
- Linear **Exponential** Quadratic or Neither
- How does it grow? $\frac{1}{3}$ of previous term
- Make a graph. Label your axes and the scale Show all 4 points.



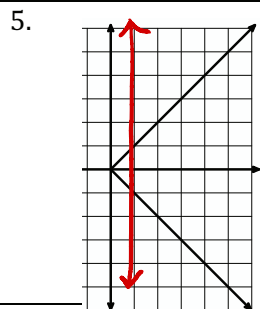
4.

x	y
0	81
1	$80\frac{2}{3}$
2	$80\frac{1}{3}$
3	80
4	$79\frac{2}{3}$

1/3 of previous term

- Function? **yes**
- Linear** Exponential, Quadratic or Neither
- How does it grow? **decreases by $\frac{1}{3}$ each time**
- Write the explicit equation.

$f(x) = -\frac{1}{3}x + 81$



- Function? **NO**
- Linear, Exponential, Quadratic or Neither
- How does it grow?
- Create a table

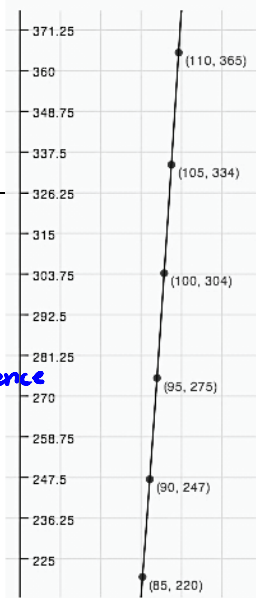
x	y
0	0
1	-1
1	1

Not a function

6. Speed in mph of a baseball vs. distance in ft.

- Function? **yes**
- Linear, Exponential, **Quadratic** or Neither
- How does it grow? **Quadratic Growth 1st difference is linear.**
- Predict the distance the baseball flies, if it leaves the bat at a speed of 115 mph.

397 ft.



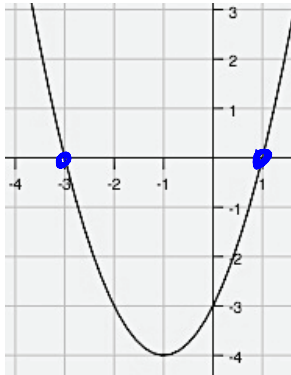
x	f(x)	1stdiff
85	220	
90	247	+27
95	275	+28
100	304	+29
105	334	+30
110	365	+31
115	397	+32

GO

Topic: Matching function representations

Match the function on the left with the equivalent function on the right.

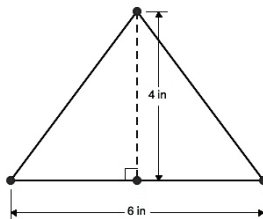
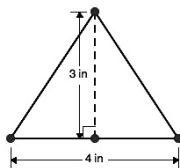
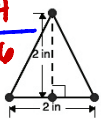
b & d 7. $f(x) = -2x + 5$
f 8.



g 9. I put \$7000 in a savings account that pays 3% interest compounded annually. I plan to leave it in the bank for 20 years. The amount I will have then.

C 10. The area of the triangles below.

Figure #	Area
0	+0
1	+2
2	+4
3	+6



a 11. $f(0) = 5; f(n) = 2 * f(n-1)$

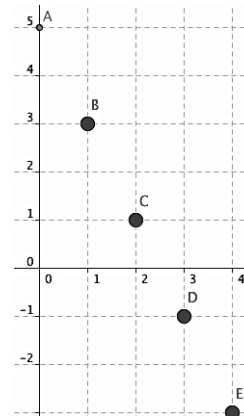
b 12. $f(0) = 5; f(n) = f(n-1) - 2$

e 13.

x	-7.75	-1/4	1/2	11.6
f(x)	7.75	1/4	-1/2	-11.6

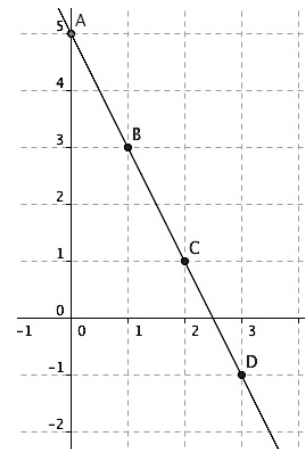
a $f(x) = 5(2)^x$

b.



c. $f(1) = 2; f(n+1) = f(n) + 2n + 1$

d.



e. $y + x = 0$

f. $y = (x - 1)(x + 3)$

g. $A = 7000(1.03)^{20}$