

Pre-Algebra, Unit 5B Practice Test: Linear Equations

Name: _____

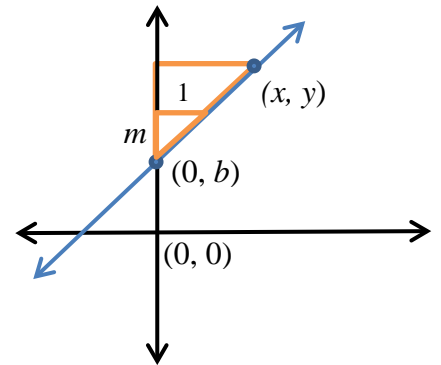
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1. What does the m in $y = mx + b$ represent? Explain its meaning.

2. Name 2 ways to distinguish a proportional relationship from a nonproportional relationship.

3. (SBAC/SE EE6) Use the diagram to determine what the first step would be to derive $y = mx + b$ when

(A) Using the formula for slope.



(B) Using similar triangles.

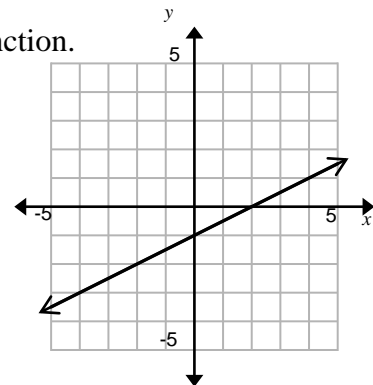
4. (SBAC F3/SE EE6) The graph shown represents a linear function. Select the equation represented by the graph.

A. $y = \frac{1}{2}x - 1$

B. $y = -\frac{1}{2}x - 1$

C. $y = 2x - 1$

D. $y = -2x - 1$



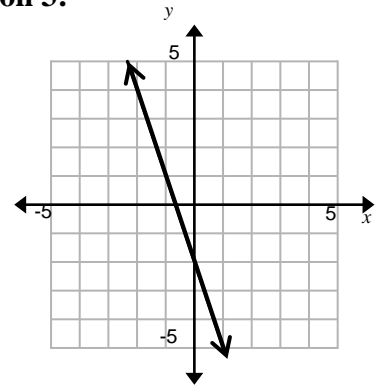
Use the given information to answer the following questions 5 – 6.

Function 1:

x	-1	0	1	2
y	6	3	0	-3

Function 2: $y = -3x + 4$

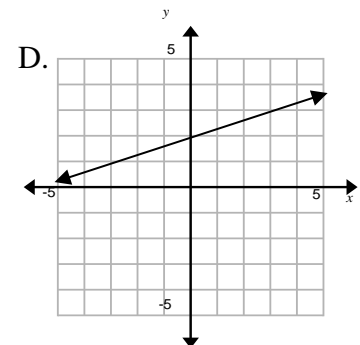
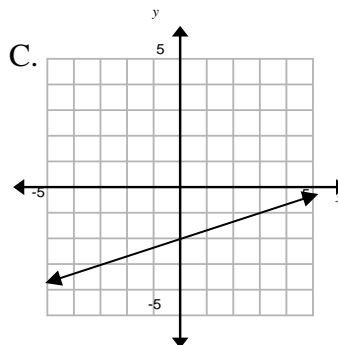
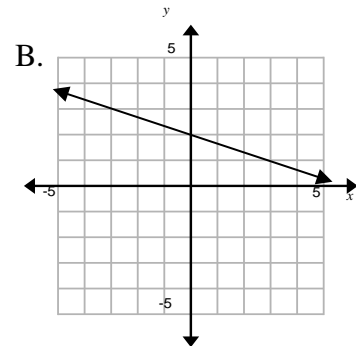
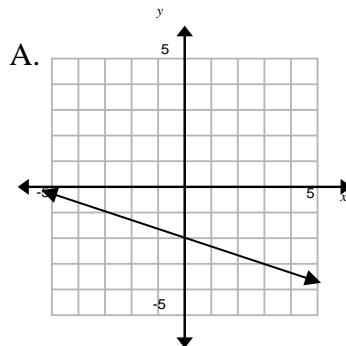
Function 3:



5. (SE) What is the y-intercept for Function 1?
- (A) -3
 - (B) 0
 - (C) 1
 - (D) 3
6. (SE) Which function has a greater rate of change?
- (A) Function 1
 - (B) Function 2
 - (C) Function 3
 - (D) All are the same

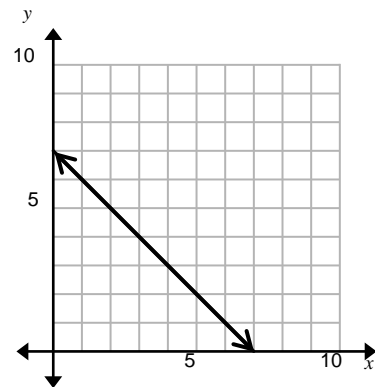
7. (SE EE6) Which graph represents the given equation?

$$y = -\frac{1}{3}x - 2$$



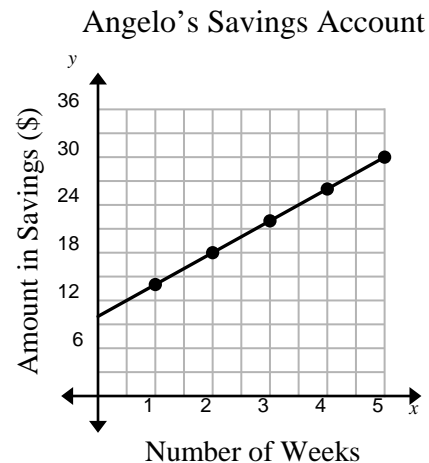
8. (SBAC EE6) Consider the line shown on the graph. Give the equation of the line in the form $y = mx + b$ where m is the slope and b is the y -intercept.

Equation: _____



9. (SBAC) This graph shows the relationship between the amount of money in Angelo's savings account and the number of weeks Angelo has been saving money. He started with \$10 in his account. Select the statement that correctly reflects what is shown in the graph.

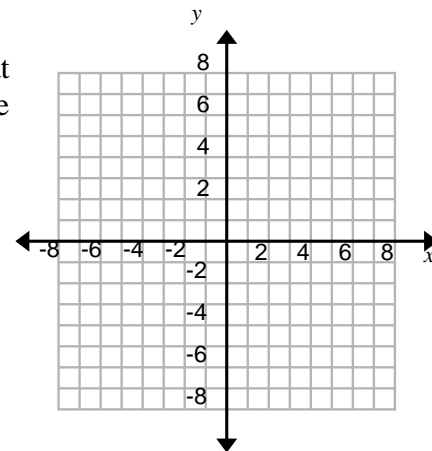
- A. The slope of the line is $\frac{14}{1}$, so Angelo's savings rate is \$14 every week.
 B. The slope of the line is $\frac{14}{1}$, so Angelo's savings rate is \$1 every 14 weeks.
 C. The slope of the line is $\frac{4}{1}$, so Angelo's savings rate is \$4 every week.
 D. The slope of the line is $\frac{4}{1}$, so Angelo's savings rate is \$1 every 4 weeks.



10. (SBAC F2) Marcie and Kiah wrote down two different functions that have the same rate of change. Marcie's function is represented by the table shown.

x	y
-1	-4
1	2
3	8

Graph a function that could be Kiah's function.



11. (SBAC F2) Which table of values can be represented by the function $y = 4x - 1$?

A.

x	y
-4	-15
-3	-11
-2	-7
-1	-3

B.

x	y
-15	-4
-11	-3
-7	-2
-3	-1

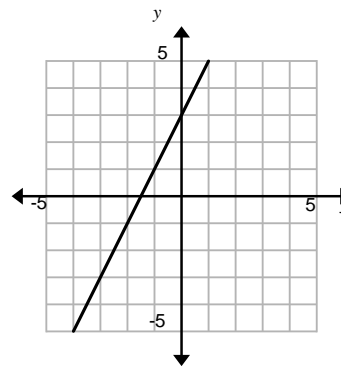
C.

x	y
-4	-17
-3	-13
-2	-9
-1	-5

D.

x	y
-17	-4
-13	-3
-9	-2
-5	-1

12. (SBAC F2) Consider this graph of the line. Which equation has a rate of change *greater* than the rate of change for the line shown?



- A. $y = \frac{x}{3} + 1$
 B. $y = 2x + 2$
 C. $y = \frac{x}{2} + 4$
 D. $y = 3x - 1$
13. (SBAC F2) A small swimming pool has 42 gallons of water in it. To fill it, water is added at a rate of 6 gallons per second. Select the equation that models the relationship between the amount of water (W), in gallons, in the swimming pool after the amount of time (t) seconds.
- A. $W = 42t + 6$
 B. $W = 6t + 42$
 C. $W = 7t + 42$
 D. $W = 42t + 7$
14. (SBAC F2) The table and equation shown each represent a different linear function.

x	y
-3	0
0	6
3	12
6	18

$$y = 5x + 3$$

What is the difference between the rates of change for these two functions?

15. (SBAC F2) The table shows the relationship between the monthly cell phone cost for **Plan A** and the number of minutes used within a month.

Cell Phone Cost for Plan A	
Time (min)	Cost (dollars)
0	30.00
2	30.20
4	30.40

The following equation shows the relationship between the monthly cell phone cost (c) in dollars for **Plan B** and the number of minutes used with a month (m).

$$c = 40 + .05m$$

The flat rate is defined as the monthly cost for the phone when zero minutes are used. What is the difference, in dollars, between the flat rate for **Plan B** and the flat rate for **Plan A**?