TOPIC 2 POSTTEST

First and Last Name _____

Teacher _____ **Block** _____

This test will help us learn how you think about algebra topics from Topic 2: Functions and Graphing Linear Equations. Please do your best to circle an answer for all the questions.

If you don't know an answer, you may guess or write "I don't know". Please don't leave any questions blank – we want to know how much you had time to try.

If you make a mistake, please lightly cross out the work, but do not erase it. You may NOT use a calculator.

Only work forwards in the test booklet. Do not go back to a page that you've already looked at, even if you have extra time. You have 45 minutes to answer all the questions.
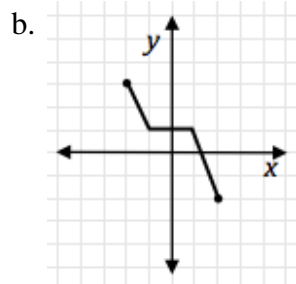
Thank you for doing your best work!

This page is blank on purpose!

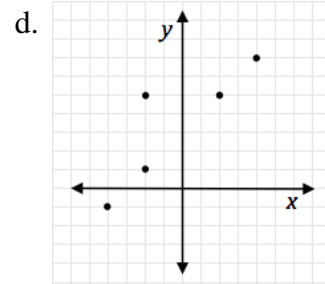1) Circle the example where the relation is NOT a function.

a.

x	y
9	1
7	2
5	2
3	3
1	4

b.

c.

x	y
-2	4
1	4
2	4
3	4
6	4

d.

2) Circle the example that could represent a linear function.

a.

x	1	2	3	6
y	2	4	6	8

b.

x	1	3	5	3
y	4	2	0	-2

c.

x	-3	0	3
y	4	6	8

d.

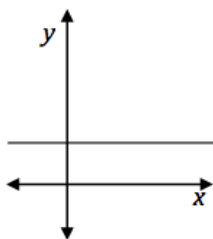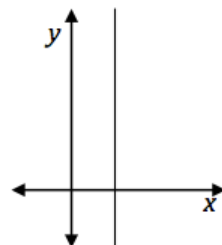| x	-2	0	2
y	10	6	5

3) Sam drew the line $y = 6$. Andrea drew the line $x = 15$. Below are graphs that might show what Sam or Andrea drew. Which graph is correct?
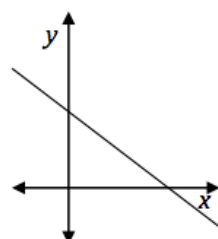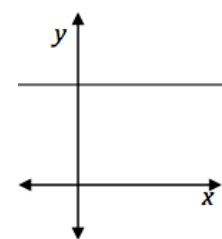
a. Sam's graph   b. Sam's graph   c. Andrea's graph   d. Andrea's graph

4) Circle the description that does NOT define the slope of a line between the points (x_1, y_1) and (x_2, y_2).

a. $\dfrac{x_1 - x_2}{y_1 - y_2}$

b. $\dfrac{y_1 - y_2}{x_1 - x_2}$

c. $\dfrac{y_2 - y_1}{x_2 - x_1}$

d. the ratio of the change in y coordinates to the change in x coordinates

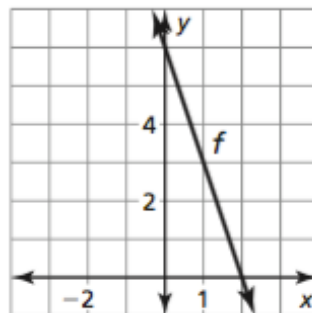5) Which pair of points lies on a line that has a slope of 0?

a. (3, 2) and (3, 7)
b. (3, 3) and (4, 4)
c. (3, 2) and (4, 2)
d. (1, 0) and (0, 1)

6) Using the graph below, find the value of x so that $f(x) = 3$.

a. 2
b. 1
c. 3
d. 6

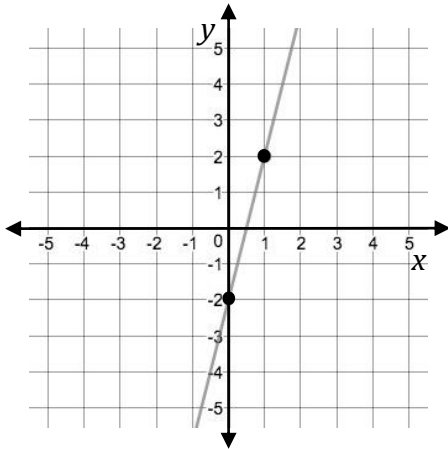7) What is the slope of the line given by the equation $8x - 2y = 8$?
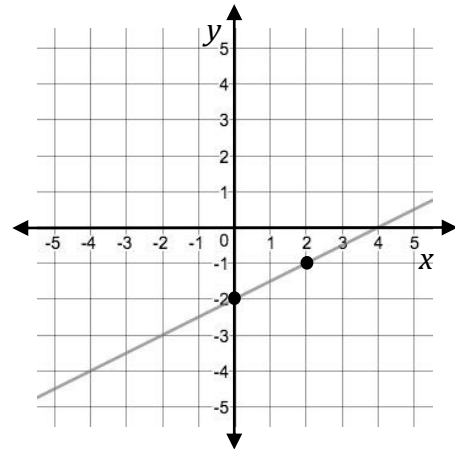
a. 4
b. -2
c. 8
d. 1/4

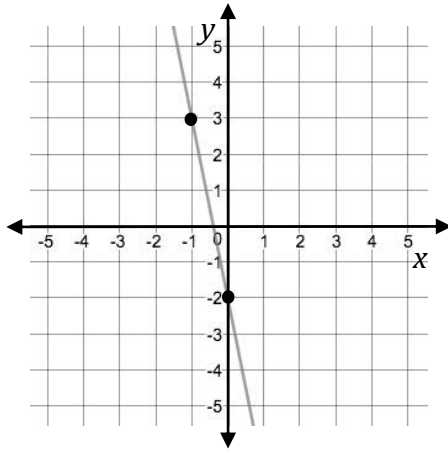8) Which of the following is the graph of the equation $16x - 4y = 8$?

a.
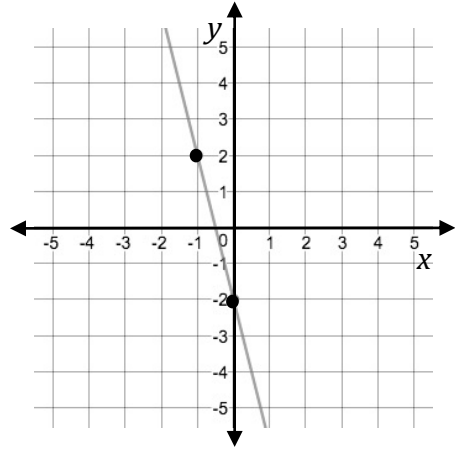

b.

c.
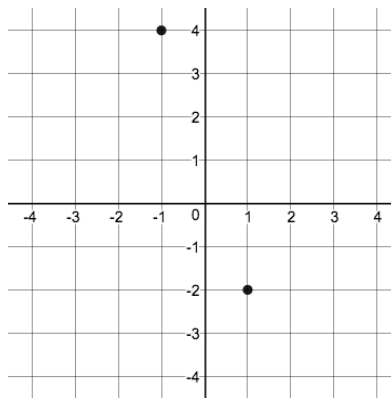

d.

9) Use the graph below to find the slope of the line passing through the two plotted points.

a. 3
b. -3
c. 1/3
d. -1/3

10) Kelly drew a line passing through the points (-4, 6) and (-3, 10). What is the y-intercept of the line she drew?

   a. $b = 4$

   b. (0, 22)

   c. (0, 10)

   d. (0, -10)

11) The points shown in the table lie on a line. What is the slope of the line?

x	1	3	7	-1
y	-1	2	8	-4

  a. $\dfrac{-2}{3}$ b. $\dfrac{2}{3}$ c. $\dfrac{3}{2}$ d. $\dfrac{8}{7}$

12) Which of the following is an equation for the line passing through the points (-3, 4) and (0, 10)?

   a. $y - 4 = 2(x - 3)$

   b. $y - 4 = \dfrac{1}{2}(x + 3)$

   c. $y - 4 = \dfrac{1}{2}(x - 3)$

   d. $y - 4 = 2(x + 3)$

13) Rodney was asked to find possible equations for the line passing through the points (2,-1) and (-3, 9). Of the lines he listed below, three are correct, but one is incorrect. Which of the following is **NOT** an equation for the line passing through the points (2,-1) and (-3, 9)?

a. $y + 1 = -2(x - 2)$

b. $y - 9 = -2(x + 3)$

c. $y - 1 = -2(x + 2)$

d. $y = -2x + 3$

14) Jamal graphed the line given by the following equation:

$$2x + 3y = 12$$

This is how Jamal started the problem:

$2x + 3y = 12$ $2x + 3y = 12$

$2x + 3(0) = 12$ $2(0) + 3y = 12$

14a. Which of the following describes Jamal's approach?
- a. Convert the equation to $y = mx + b$ form.
- b. Find the slope.
- c. Solve for y.
- d. Find the x- and y-intercepts.

14b. For which of the following equations would Jamal's approach be the BEST way?
Circle one:
- a. $3x + 5y = -22$
- b. $5x + 3y = 16$
- c. $5x + 3y = -30$
- d. $3x + 5y = 17$

For question 15, **imagine you are taking a timed test.** *You want to use fast (and correct) ways to solve the problems so you can finish as many as possible. Choose the best way to approach each problem.*

15) On a timed test, which would be the BEST way to start to find the y-intercept of the line connecting the two points (3, 0) and (5, -8)? (Circle the letter for the best way(s)).

   a. Gabriella's way
   b. Jamal's way
   c. Nadia's way
   d. Gabriella's and Jamal's ways
   e. Gabriella's and Nadia's ways

Gabriella's way:	Jamal's way:
$$m = \frac{-8-0}{5-3} = \frac{-8}{2} = -4$$ $$y = -4x + b$$ $$0 = -4(3) + b$$	$$m = \frac{-8-0}{5-3} = \frac{-8}{2} = -4$$ $$y = -4x + b$$ $$-8 = -4(5) + b$$

Nadia's way: