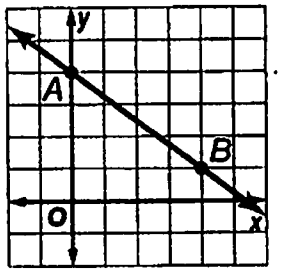
Name: _____ Class: ____ Date: 2/15/19

8th Grade Math - (CCSS: 8.EE.5, 8.EE.6)

Module 4B District Unit Assessment Study Guide

1. Line AB represents a steep hill.



What is the slope of the hill?

a. $-\frac{4}{3}$

b. $-\frac{3}{4}$

c. $\frac{3}{4}$

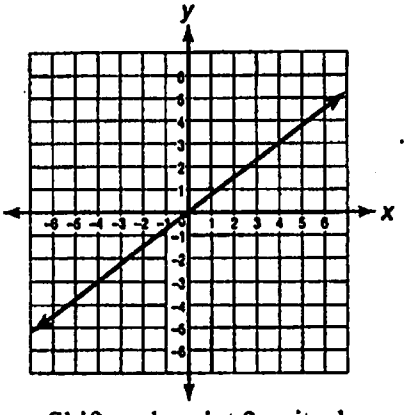
d. $\frac{4}{3}$

2. Which of the following points do <u>not</u> lie on the line $y = 3x - 8$?
   a. (0, -8)
   b. (6, 10)
   c. (3, 1)
   d. (-8, 0)

3. Which is the equation of a line that intersects the y-axis at 2 and has a slope of -2?
   a. $y = 2x - 2$
   b. $y = -2 + 2$
   c. $2y = -2x + 2$
   d. $y = -2x + 2$

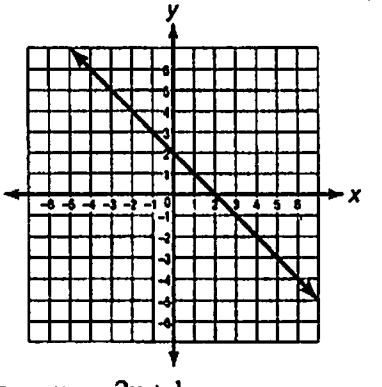
4. If the slope of a line is $\frac{3}{4}$, which two points are on the line?
   a. (1, 3) and (-1, 2)
   b. (-1, -1) and (3, 3)
   c. (5, 2) and (3, 2)
   d. (-1, -1) and (3, 2)

5. The graph below represents $y = \frac{3}{4}x$. Which describes how this graph would need to be shifted in order to graph $y = \frac{3}{4}x + 2$?



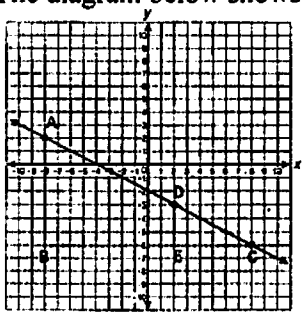
   a. Shift each point 2 units down.
   b. Shift each point $\frac{3}{4}$ units up.
   c. Shift each point $\frac{3}{4}$ units down.
   d. Shift each point 2 units up.

6. Which equation best represents the line graphed below?



   a. $y = -2x + 1$
   b. $y = -x + 2$
   c. $y = x + 2$
   d. $y = 2x - 1$

7. The diagram below shows ΔABD and ΔCDE.



Which statement about the slopes of $\overline{AD}$ and $\overline{DC}$ is true?

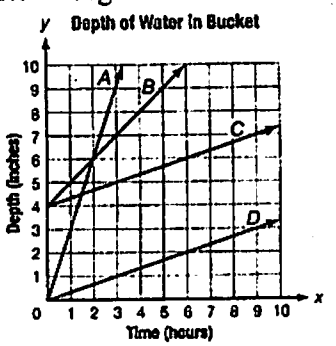
a. The slope of $\overline{AD}$ is 7 times the slope of $\overline{DC}$ because the area of ΔABD is 7 times the area of ΔCDE.

b. The slope of $\overline{AD}$ is 2.7 times the slope of $\overline{DC}$ because the length of $\overline{AD}$ is 2.7 times the length of $\overline{DC}$.

c. The slope of $\overline{AD}$ is the same as the slope of $\overline{DC}$ because ΔABD is similar to ΔCDE.

d. The slope of $\overline{AD}$ is 11 more than the slope of $\overline{DC}$ because the difference between the short legs of the triangle is 5 and the difference between the long legs of the triangles is 10.

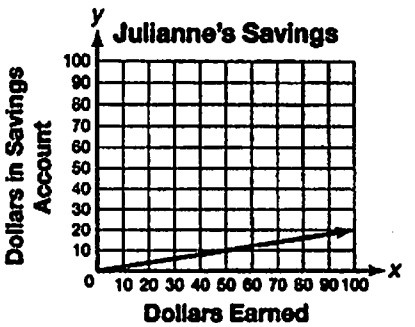
8. During a rainstorm, the depth of water in a bucket increases according to the equation $y = \frac{1}{3}x + 4$ where y represents the depth of the water in inches and x represents the number of hours since the storm began.



Which line represents the equation?

a. line A
b. line B
c. line C
d. line D

9. Julianne deposits a fraction of her earnings into a savings account. The line graphed below shows the total savings in her account based upon her earnings.



What is the equation of the line represented?

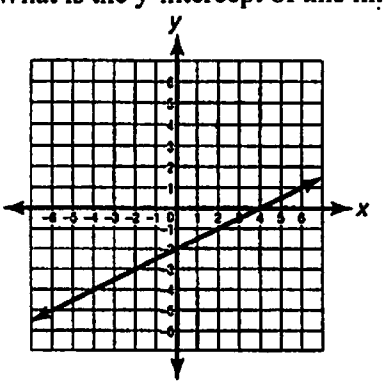
a. $y = 5x + 2$

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

c. $y = \frac{1}{5}x$

d. $y = \frac{2}{5}x$

10. What is the y-intercept of this line?



What is the equation of the line represented?

a. (–2,0)
b. (0,–2)
c. (0,4)
d. (4,0)

11. Which of the following is the slope of the line given by $6x - 10y = 13$?

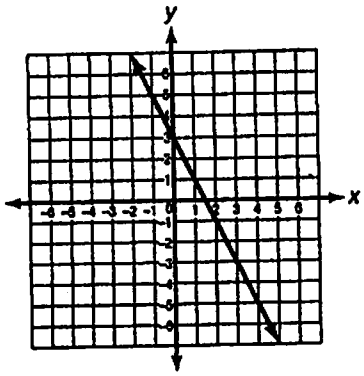
a. $\frac{3}{5}$

b. 3

c. $\frac{13}{6}$

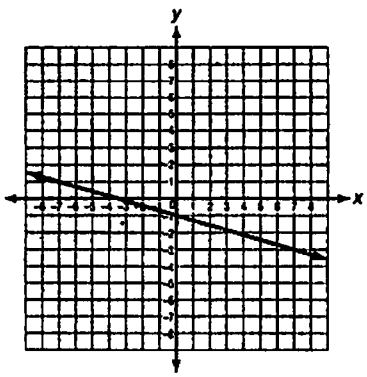
d. 6

12. Which equation best represents the line graphed below?



a. $y = -2x + 3$
b. $y = -x + 2$
c. $y = x + 2$
d. $y = 2x - 3$

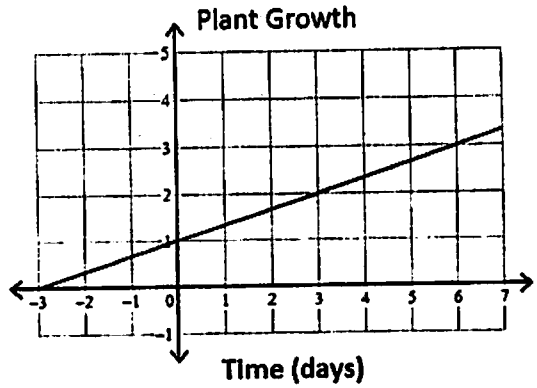
13. Which equation best represents the line graphed below?



a. $y = -\frac{7}{2}x + 1$
b. $y = \frac{7}{2}x - 1$
c. $y = \frac{2}{7}x + 1$
d. $y = -\frac{2}{7}x - 1$

14. What is the slope of the equation $6x + 3y = 36$?
a. -6
b. 2
c. -2
d. 6

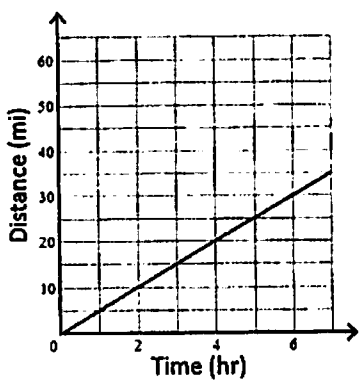
15. In the following graph, a plant grows at a constant rate each day.



What is the constant rate of change shown of the line?

a. 3
b. $\frac{1}{3}$
c. 2
d. $\frac{1}{2}$

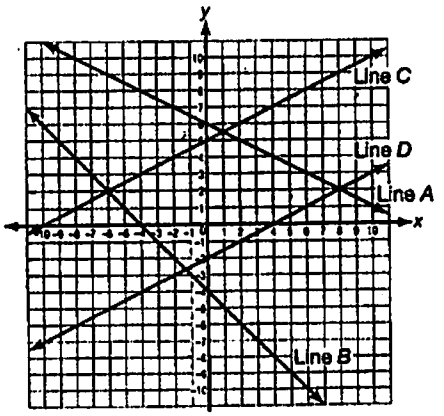
16. The graph below shows time and distance for a bicycle rider.



What is the rate of change shown of the line?

a. $\frac{1}{5}$
b. 2
c. 5
d. $\frac{1}{2}$

Use this grid for questions 32-34.

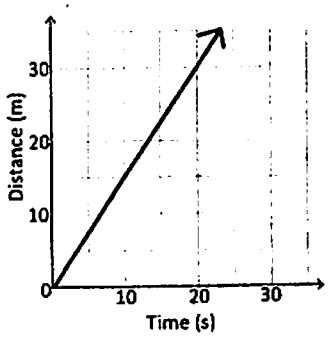


32. What is the y-intercept of line A?
    a. (0, 6)
    b. (0, 4)
    c. (0, -2)
    d. (11, 0)

33. Which line represents the equation of $y = \frac{1}{2}x - 2$?
    a. line A
    b. line B
    c. line C
    d. line D

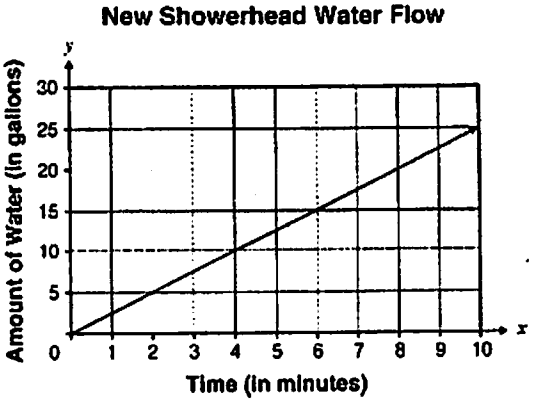
34. Which line represents the equation of $2y + 2x + 8 = 0$?
    a. line A
    b. line B
    c. line C
    d. line D

35. The graph shows Ann's running speed. What is her unit rate?



    a. 0 m/s
    b. 1.5 m/s
    c. 10 m/s
    d. 15 m/s

36. Mr. Diaz changed his showerhead to conserve water and energy. The table below shows relationship between the amount of flow and the duration of the water flow.



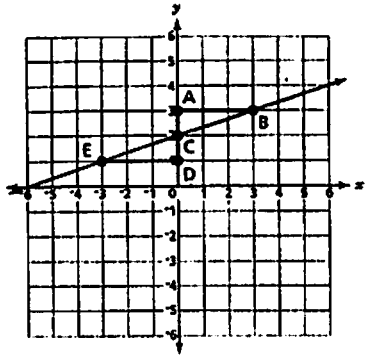
Which statement BEST describes the rate of water flow?
    a. 0.4 gallons per minute
    b. 2.1 gallons per minute
    c. 2.5 gallons per minute
    d. 3.0 gallons per minute

37. At Silver Middle School, each classroom has the same number of desk. The table below shows the total number of desk and the number of classrooms. Circle ALL the statements that are true.

Number of Classrooms	Total Number of Desk
3	75
4	100
6	150
9	225

    a. Each classroom has 7 desk.
    b. The unit rate is 25 desk per 1 classroom.
    c. The relationship between classrooms and desk is a proportional relationship.
    d. In 2 classrooms, there are 68 desk.
    e. y = 7x is the equation that represents the data.
    f. y = 25x is the equation that represents the data.

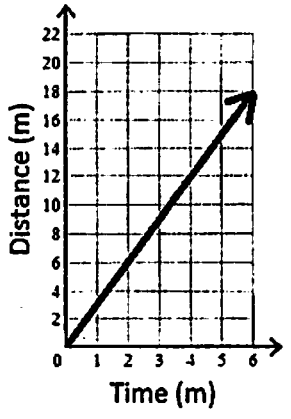
28. Nina wants to derive the equation of line $\overline{BE}$ in the graph shown below. She started by defining the length of $\overline{CD}$ to be 1, the length of $\overline{DE}$ to be 3, and the length of $\overline{AB}$ to be x.



What should she define the length of $\overline{AC}$ to be so that she can set up a proportion and derive the equation?

a. $y-2$
b. $y-1$
c. $y+1$
d. $y+2$

29. The graph shows Tony's speed.



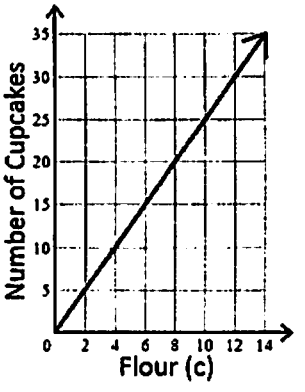
What is Tony's constant speed?

a. 0.75 meters per minute
b. 1 meter per minute
c. 3 meters per minute
d. 6 meters per minute

30. A candle factory makes colored candle chips to sell in packages. Which of the following situations BEST represents a proportional relationship?

a. Manny sold 109 packages on his first day at work. Gloria sold 100 packages on her first day at work.
b. On Monday, 25 packages were prepared every working hour. On Tuesday, 20 packages were prepared every working hour.
c. Each individual pages is sold for $1.98. Ten packages are sold for $16.99
d. Each package has 8 yellow candle chips. A total of 18 packages will have 144 yellow candle chips.

31. Look at the graph below that shows the amount of flour needed to bake a specific number of cupcakes.



What is the constant rate of change between the number of cupcakes and cups of flour?

a. $\frac{2}{5}$
b. $\frac{14}{35}$
c. $\frac{5}{2}$
d. $\frac{1}{5}$

Constructed Responses

43. The table shown below was posted on the wall at Andy's Hardware to show the price of varying lengths of chain-link fencing.

PRICE OF FENCING

Length (feet)	Price
75	$168.75
125	$281.25
175	$393.75
225	$506.25

The price of the same fencing at Bargain Hardware can be determined by the equation $y = 2.50x$, where y is the price, in dollars, for x feet of fencing. Determine the unit price for fencing, in dollars per foot, for each store.

Show your work.

Answers Andy's Hardware $_____ per foot

Bargain Hardware $_____ per foot

On the grid below, graph for each store the relationship between the length of the fencing and the price to verfiy your answers. Be sure to label each line.