Name _____ Class _____ Date _____

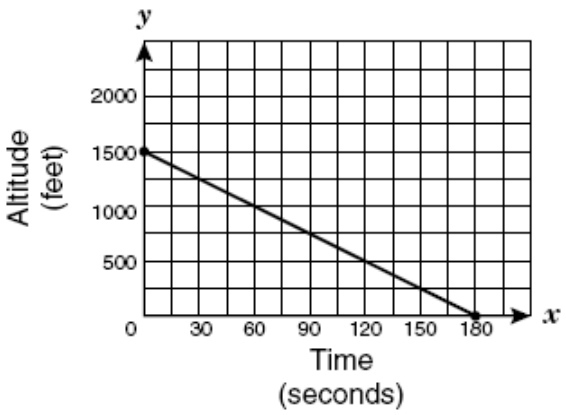
Algebra 1 STAAR EOC Review #5
Reporting Category 3: Linear Functions
A.6bcd

RC 3 A.06B

1. What are the slope and *y*-intercept of a line that contains the point (5,-1) and has the same *y*-intercept as $x - 3y = 6$?

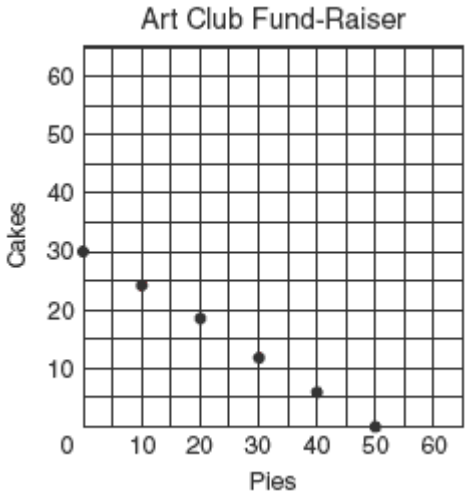
   A. $m = \frac{1}{3}$, $b = 6$
   B. $m = 5$, $b = -2$
   C. $m = \frac{1}{5}$, $b = -2$
   D. $m = 3$, $b = 6$

2. The line segment on the graph shows the altitude of a landing airplane from the time its wheels are lowered to the time it touches the ground. Which of the following best describes the slope of the line segment?



   F. The plane descends about 1 foot per 8 seconds.
   G. The plane descends about 8 feet per second.
   H. The plane descends about 1 foot per 2 seconds.
   J. The plane descends about 2 feet per second.

3. The graph below shows the number of pies and the number of cakes that the students in the art club need to sell at the school bake sale in order to raise $150.



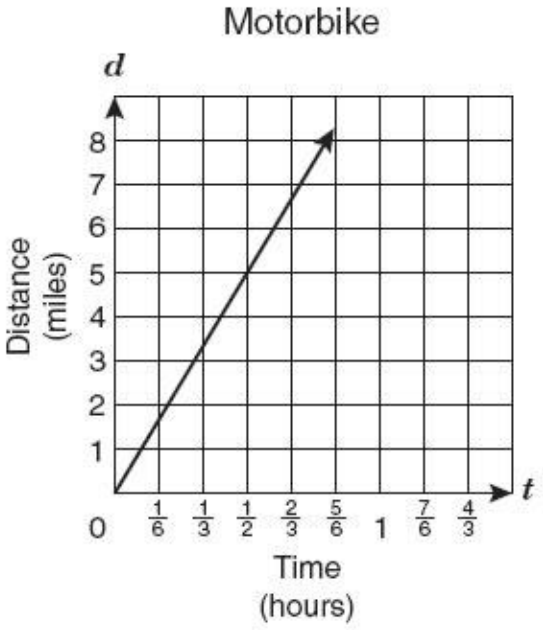
   Which of the following represents the maximum number of cakes the art club could sell to raise exactly $150?

   A. 40
   B. 25
   C. 50
   D. 30

4. The cost of renting a car for 1 day at Cars Plus is $20 plus 10 cents per mile driven. The cost of renting a car for 1 day at Need-A-Car is $20 plus 15 cents per mile driven. In a graph of the cost of a car rental, what does the cost per mile driven represent?

   F. The *x*- intercept
   G. The *y*-intercept
   H. The slope
   J. The point of intersection

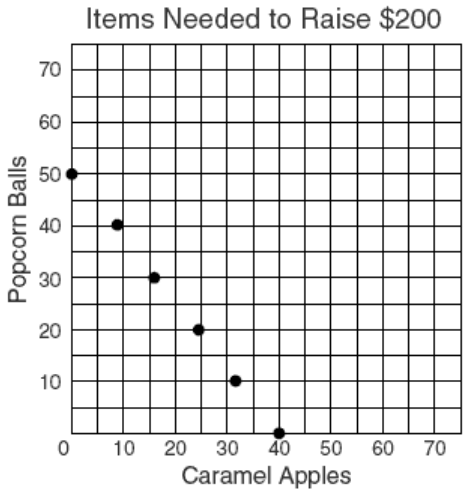
5. The graph shows the distance a certain motorbike can travel at a constant speed with respect to time.



Which of the following best describes the meaning of the slope of the line representing this situation?

A. The motorbike travels at a speed of about 8 miles per hour.
B. The motorbike travels at a speed of about 2.5 miles per hour.
C. The motorbike travels at a speed of about 5 miles per hour.
D. The motorbike travels at a speed of about 10 miles per hour.

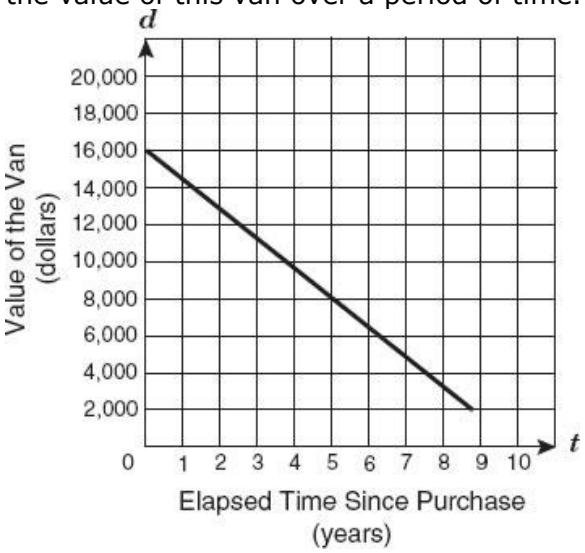
6. The graph below shows the number of caramel apples and the number of popcorn balls that the students in the math club need to sell at their bake sale to raise $200.



Which of the following numbers represents the maximum number of caramel-apple sales needed to raise exactly $200?

F. 50
G. 40
H. 25
J. 20

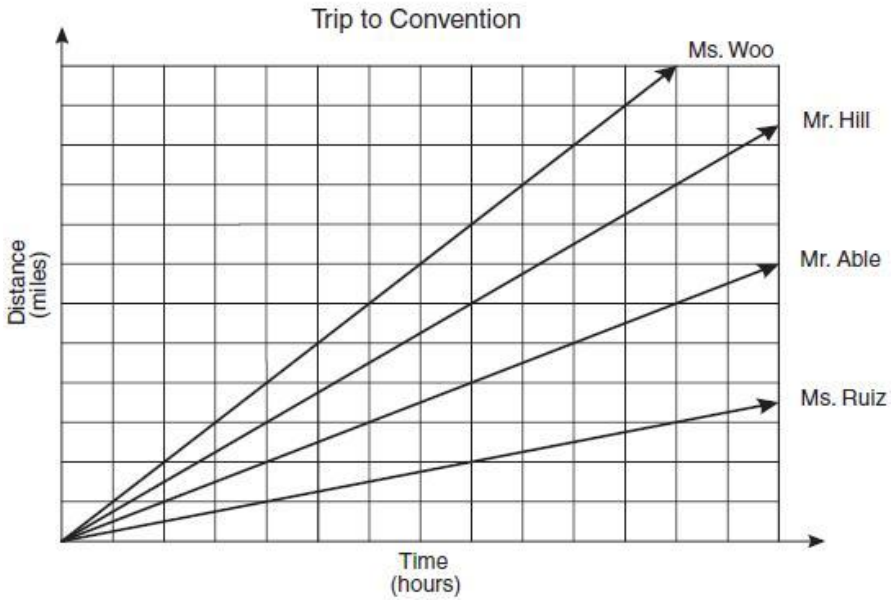
7. A small business purchased a van to handle its delivery orders. The graph below shows the value of this van over a period of time.



Which of the following best describes this situation?

A. The van was purchased for $1,600.
B. The van decreases in value by $1,600 per year.
C. The van increases in value by $1,600 per year.
D. The van has no value after 5 years.

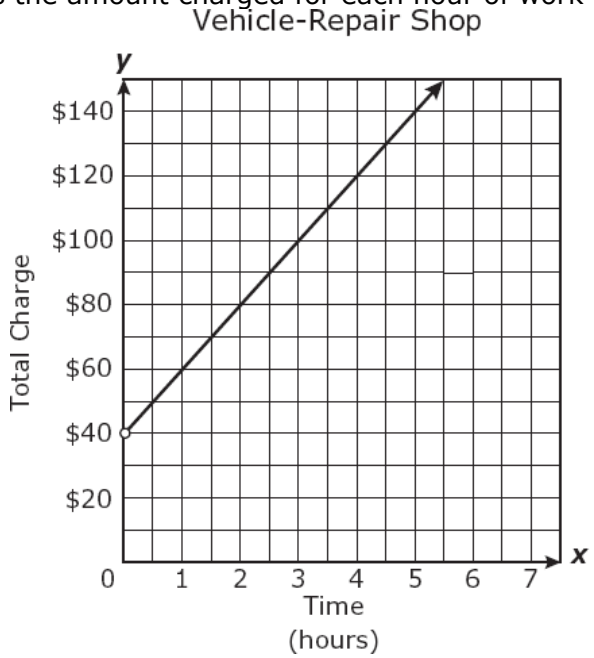
8. Some employees of Ace Corporation left their office building and drove separately on the same road to a convention. the graph shows the distance traveled by each employee after 5 hours of nonstop driving at 4 different speeds.



Which employee drove at the slowest rate to the convention?

F. Mr. Able
G. Ms. Ruiz
H. Ms. Woo
J. Mr. Hill

9. The graph below shows the total charge for labor at a vehicle-repair shop. The total charge includes the basic service charge plus the amount charged for each hour of work done on a vehicle.



Based on the graph, what is the amount charged for each hour of work done on a vehicle at this shop?

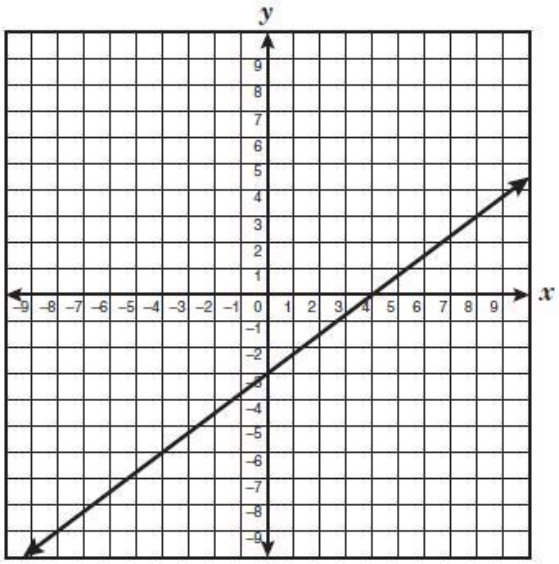
A. $15 per hour
B. $20 per hour
C. $10 per hour

RC 3 A.06C

10. The original function $y = \frac{2}{5}x + 4$ is graphed on the same grid as the new function $y = -\frac{2}{5}x + 4$ Which of the following statements about these graphs is true?

F. The graph of the original function is steeper than the graph of the new function.
G. The graph of the original function is parallel to the graph of the new function.
H. The graphs intersect at (4, 0).
J. The graphs intersect at (0, 4).

11. Which best describes the effect on the *x*-intercept of the graph of $f(x) = \frac{3}{4}x - 3$ if the slope is changed to $-\frac{3}{4}$?

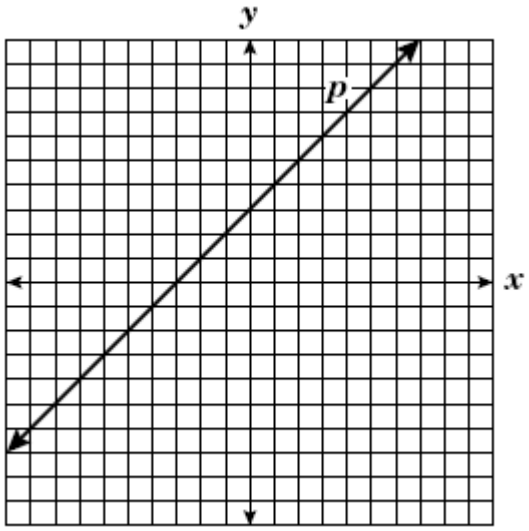


A. The *x*-intercept remains the same, and the new line is translated upward.
B. The *x*-intercept becomes negative, and the new line is parallel to the original line.
C. The *x*- intercept remains the same, and the new line is translated downward.
D. The *x*- intercept becomes negative, and the new line intersects the original line.

12. If the slope of the function y = −3.5x + 12.8 is changed to 1.5, which of the following best describes the graph of the new function?

F. The graph of the new function intercepts the y-axis at the same point as the original function.
G. The graph of the new function intercepts the x-axis at the same point as the original function.
H. The graph of the new function has a negative slope.
J. The graph of the new function has a positive x-intercept.

13. What will happen to the slope of line *p* if the line is shifted so that the y-intercept increases and the *x*-intercept remains the same?



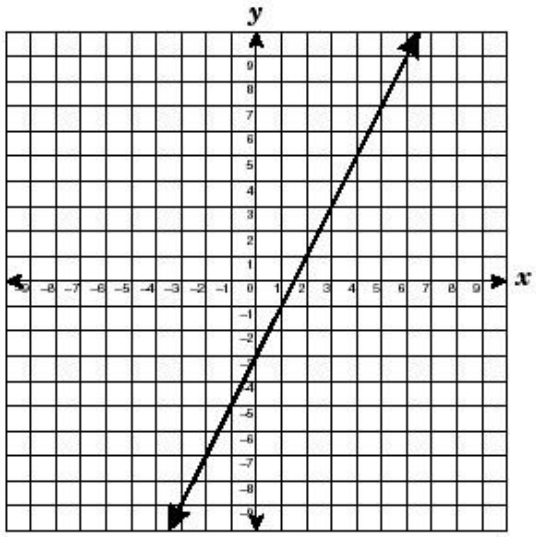
A. The slope will change from positive to negative.
B. The slope will change from negative to positive.
C. The slope will increase.
D. The slope will decrease.

14. Given the function *y* = 3.54*x* - 54.68, which statement best describes the effect of increasing the *y*-intercept by 33.14?

F. The new line is parallel to the original.
G. The new line has a greater rate of change.
H. The *x*-intercept increases.

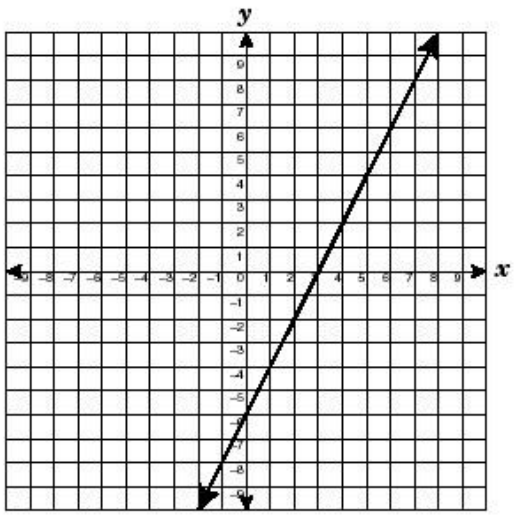
J. The *y*-intercept decreases.

15. The graph of a line that contains the points (-1, -5) and (4, 5) is shown below.

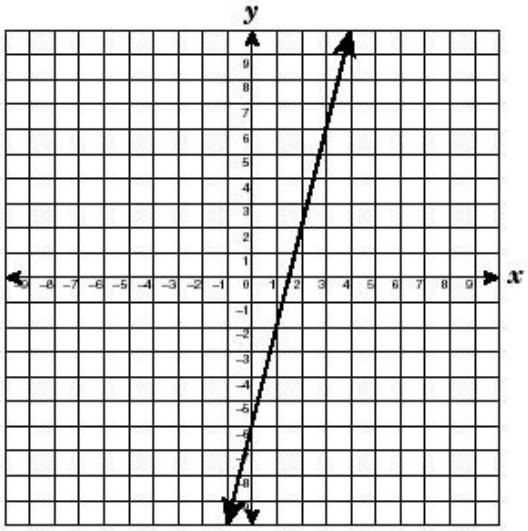


Which best represents this line if the slope is doubled and *y*-intercept remains constant?

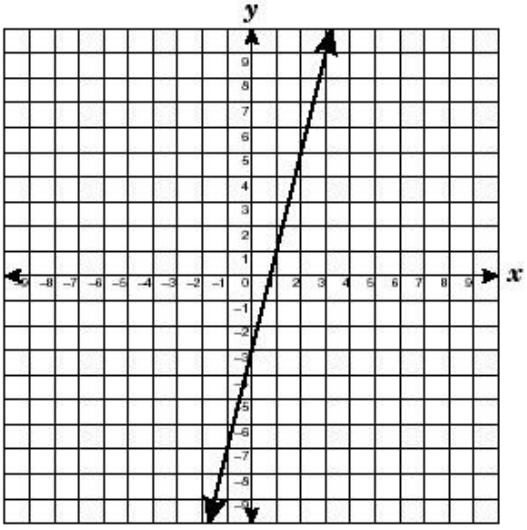
A.



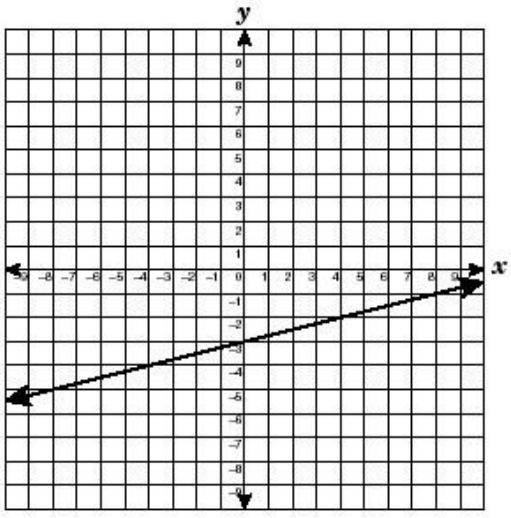
C.



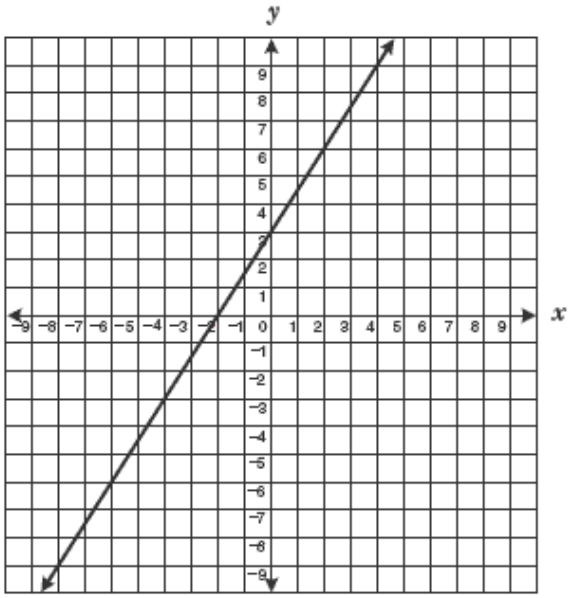
B.



D.



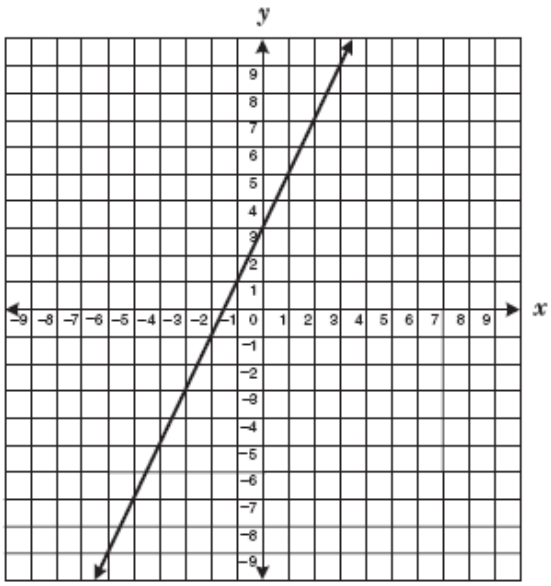
16. The line represented by the equation $y = \frac{3}{2}x + 3$ is graphed below.



Which of the following best describes the effect on the graph when the slope is doubled?

F. The *y*-intercept increases.
G. The *y*-intercept decreases.
H. The *x*-intercept increases.
J. The *x*-intercept decreases.

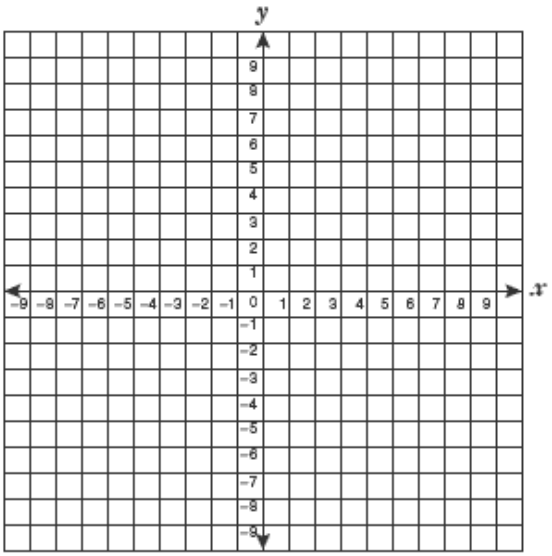
17. The graph of a line is shown below.



If the slope of this line is multiplied by −1 and the *y*-intercept decreases by 2 units, which linear equation represents these changes?

A. $y = -2x + 1$
B. $y = -x + 1$
C. $y = -x - 1$
D. $y = -\frac{1}{2}x - 1$

18. If the slope of the equation $y = -\frac{3}{5} + 4$ is changed to $\frac{3}{5}$ and the y-intercept is changed to (0, -4), which statement best describes this situation?



F. The new line is perpendicular to the original line.
G. The new line is parallel to the original line.
H. The new line and the original line have the same *y*-intercept.
J. The new line and the original line have the same *x*-intercept.

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19. Which of the following describes the line containing the points (0, 4) and (3, -2)?

A. $y = -2x + 4$
B. $y = \frac{1}{2}x + 6$
C. $y = 2x + 4$
D. $y = -\frac{1}{2}x + 6$

20. Which function represents the line that contains the point (2, 12) and has a slope of −3?

A. f(x) = −3x + 6
B. f(x) = −3x + 18
C. f(x) = −3x + 34
D. f(x) = −3x + 38

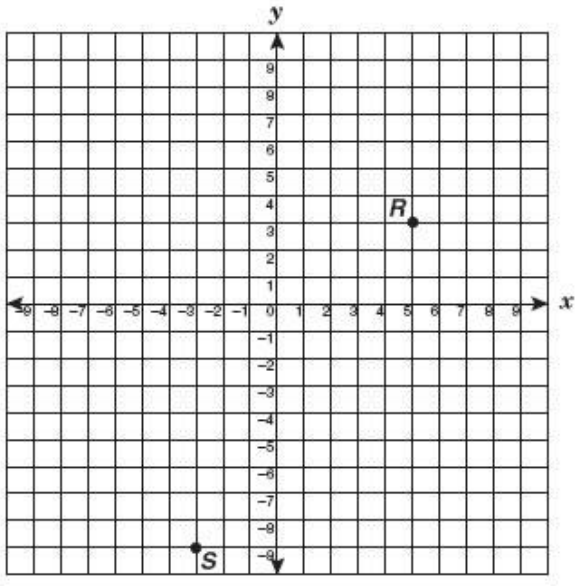
21. Which equation represents the line that passes through the points (-1, 4) and (3, 2)?

F. $y = -\frac{1}{2}x + \frac{7}{2}$
G. $y = -\frac{1}{2}x + \frac{9}{2}$
H. $y = -2x + 7$
J. $y = -2x + 3$

22. Which equation describes the line that passes through the point (4, 7) and is parallel to the line represented by the equation -3*x* + *y* = 4?

A. $y = -3x + 19$
B. $y = 3x - 5$
C. $y = -\frac{1}{3}x + 5\frac{2}{3}$
D. $y = -\frac{1}{3}x + 8\frac{1}{3}$

23. Which linear equation represents the line passing through points R and S?

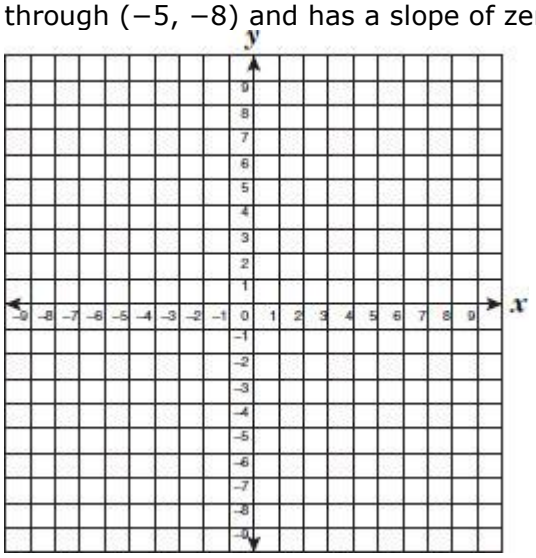


F. *y* = 1.5*x* - 4.5
G. *y* = 1.5*x* + 4.5
H. *y* = 0.5*x* - 4.5
J. *y* = 0.5x + 4.5

24. If (-3.5,y) is a solution to the equation 2x-5y =10, what is the value of y?

F. -3.4
G. 13.75
H. -0.6
J. -3.75

25. What is the equation of the line that passes through (−5, −8) and has a slope of zero?



A. $y = -5$
B. $x = -5$
C. $y = -8$
D. $x = -8$