

SAT Prep

Algebra 2



CONCEPTS

QUESTIONS

1. The slope of the line perpendicular to the line $3x + 5y + 8 = 0$ is

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

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

C. $-\frac{3}{5}$

D. $-\frac{5}{3}$



QUESTIONS

2. The y-intercept of the line through the point whose coordinates are (5, -2) and (1, 3) is

A. $\frac{5}{4}$

B. $-\frac{5}{4}$

C. 17

D. $\frac{17}{4}$



QUESTIONS

3. The length of the line segment joining the points with coordinates $(-2, 4)$ and $(3, -5)$ is

A. 2.8

B. 10.3

C. 3.7

D. 10



QUESTIONS

4. If a line passes through the points $(-10, -18)$, $(20, 22)$ and $(x, 2)$, then what is the value of x .

A. -4

B. 6

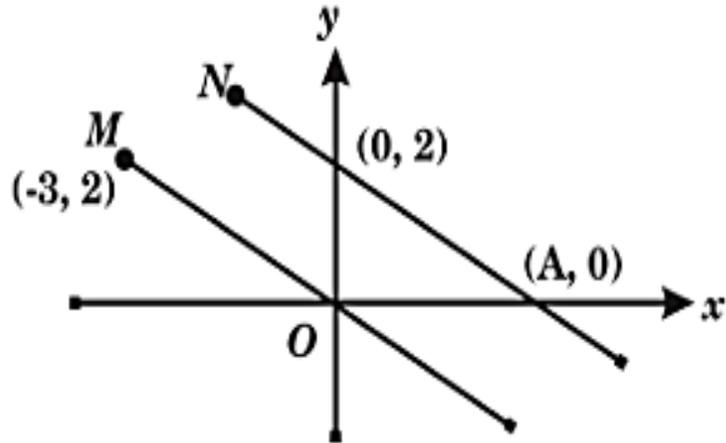
C. 5

D. 4



QUESTIONS

5.



As shown in the xy -plane, if Line M is parallel to Line N , what is the value of A ?

QUESTIONS

6. What is the y co-ordinate of the midpoint of the line segment joining $(2, 4)$ and $(10, 20)$?

QUESTIONS

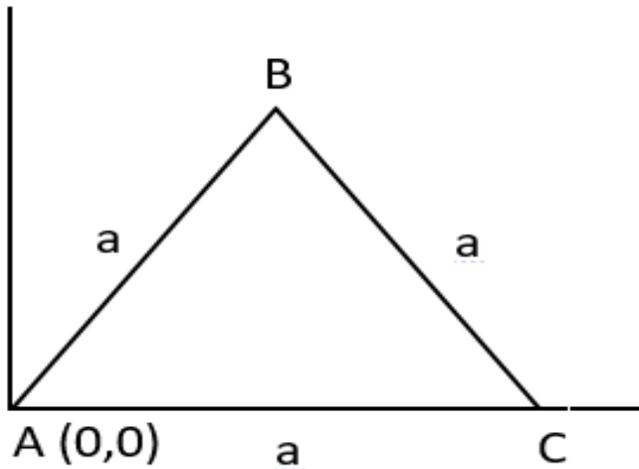
7. $x + y = 20$
 $3x + 3y = 90$

How many solutions exist for the system of equations given above?



QUESTIONS

8. In the figure shown below what is slope of line BC in the triangle ABC with sides a?



- A. -1
- B. $-\sqrt{3}$
- C. $\sqrt{3}$
- D. $-1/\sqrt{2}$

QUESTIONS

9. Which of the following equations represents a line that is parallel to the line with the equation

$$y = -2x + 4?$$

A. $2x + 4y = 0$

B. $-4x + y = -2$

C. $-6x - 3y = 9$

D. $8x - 4y = 4$



QUESTIONS

10. $ax + 3y = c$
 $6x + 9y = 15$

In the system of equations above, a and c are constants. If this system has infinitely many solutions, what is the value of $\frac{a}{c}$?



QUESTIONS

11. What is the equation of a line that contains the point (1, 6) and has a y-intercept of 4?

A. $y = \frac{1}{2}x + 4$

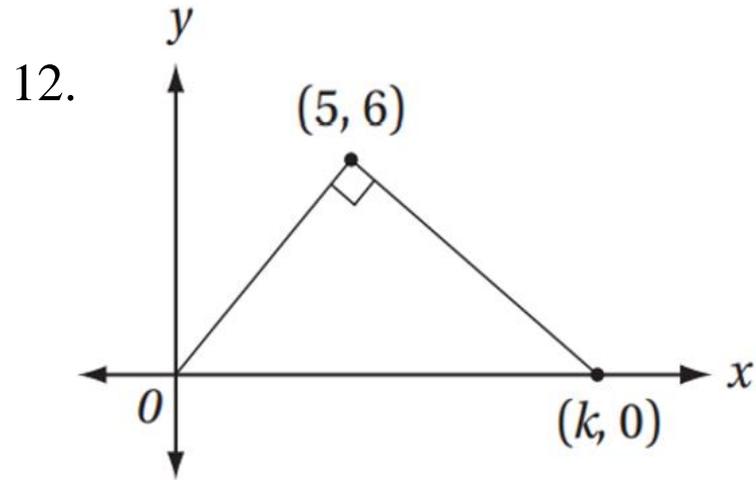
B. $y = x + 4$

C. $y = 2x + 4$

D. $y = 4x + 2$



QUESTIONS



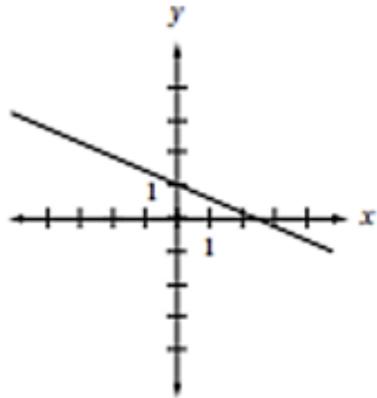
The figure above shows a right triangle with vertices at the origin, $(5, 6)$ and $(k, 0)$. What is the value of k ?

- A. $\frac{19}{3}$
- B. $\frac{58}{5}$
- C. $\frac{26}{3}$
- D. $\frac{61}{5}$

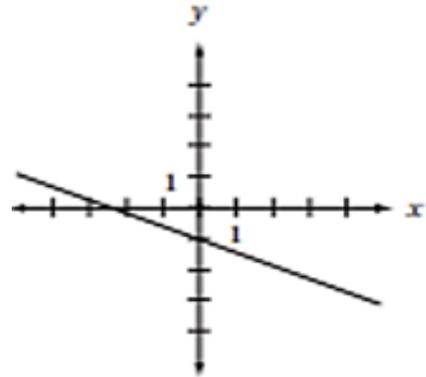
QUESTIONS

13. If m is a constant greater than 1, which of the following could be the graph in the xy -plane of $x + my + m = 0$?

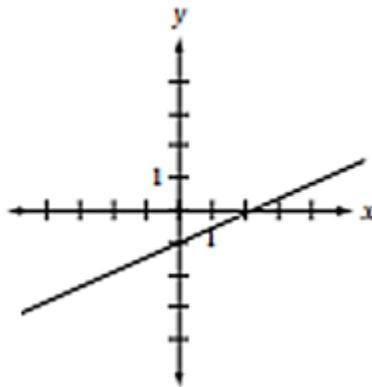
A.



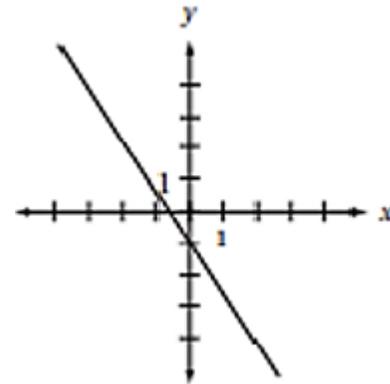
B.



C.



D.



QUESTIONS

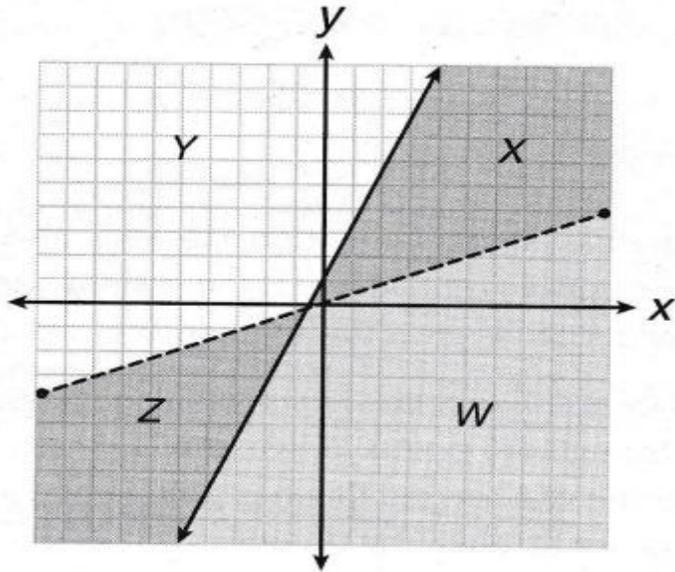
14. In the xy plane, which quadrant contains no point (x,y) that satisfies the inequality $y - x > 2$?

- A. I
- B. II
- C. III
- D. IV



QUESTIONS

15.



$$2y < x$$

$$y > 3x + 1$$

A system of inequalities and a graph are shown above. Which region or regions of the graph could represent the set of all ordered pairs that satisfy the system?

A. Region X

B. Region X and Z

C. Region X, Y and W

D. Region Z

QUESTIONS

16. $y - x < 1$
 $3y > x + 6$

In the xy plane, if the point with coordinates (a,b) lies in the solution set of the system of the inequalities above, which of the following relationships between a and b must be true?

- A. $a > b$
- B. $a < b$
- C. $ab > 0$
- D. $ab < 0$



QUESTIONS

17. $y - x \leq 1$
 $3y \geq x + 6$

In the xy plane, if the point with coordinates (a,b) lies in the solution set of the system of the inequalities above, what is the minimum possible value of a ?





Thank you