Straight lines. Form A

1. What is the slope intercept form of $6x - 2y - 4 = 0$?

(A) $y = 6x - 2$
(B) $y = 3x + 2$
(C) $y = 3x - 2$
(D) $y = -3x + 2$
(E) $y = -6x - 4$

2. Which straight line is parallel to $y = 3x + 7$?

(A) $y = \frac{1}{3}x + 7$
(B) $y = 7x$
(C) $y = 3x$
(D) $y = -3x$
(E) $y = \frac{-1}{3}x + 7$

3. Which straight line is perpendicular to $2x - y = 5$?

(A) $y = \frac{1}{2}x + 5$
(B) $y = -2x$
(C) $y = \frac{-1}{2}x + 13$
(D) $y = -5x$
(E) $y = \frac{-2}{5}x + 5$

4. For all pairs of real numbers S and T where $S = 4T - 7$, $T =$?
(A) $\frac{S}{4} - 7$
(B) $\frac{S}{4} + 7$
(C) $4S + 7$
(D) $\frac{S-7}{4}$
(E) $\frac{S+7}{4}$

5. What is the x-coordinate of the point in the standard (x, y) coordinate plane at which the two lines $y = -2x + 7$ and $y = 3x - 3$ intersect?

(A) 10
(B) 5
(C) 3

(D) 2
(E) 1

6. For what value of n would the following system of equations have an infinite number of solutions?

$$3a + b = 12$$
$$12a + 4b = 3n$$

(A) 4
(B) 9
(C) 16
(D) 36
(E) 48

7. In the (x, y) coordinate plane, what is the y-intercept of the line $-9x - 3y = 15$?
(A) -9
(B) -5
(C) -3
(D) 3
(E) -15

8. In the (x, y) coordinate plane, what is the x-intercept of the line $5x - 7y = 15$?
(A) $\frac{-15}{7}$
(B) 3
(C) $\frac{7}{15}$
(D) 15
(E) 7

9. In the standard (x, y) coordinate plane, what is the equation of the line that passes through the origin and the point $(3,4)$?
(A) $y = \frac{1}{4}x + \frac{3}{4}$
(B) $y = \frac{1}{4}x - \frac{3}{4}$
(C) $y = \frac{4}{3}x$
(D) $y = \frac{1}{2}x + \frac{3}{4}$
(E) $y = \frac{9}{4}x$

10. In the standard (x,y) coordinate plane, what is the equation of the line that passes through the origin and is parallel to the line $y - 5x + 15 = 0$

(A) $y = 5x$

(B) $y = -5x$

(C) $y = 5x + 15$

(D) $y = 3x$

(E) $y = \frac{1}{3}x$

11. In the standard (x,y) coordinate plane, what is the equation of the line that passes through $(3,4)$ and is parallel to the line $y = 2x + 2$?

(A) $y = \frac{1}{2}x + 2$

(B) $y = 2x - 2$

(C) $y = 2x + 4$

(D) $y = 2x + 10$

(E) $y = 3x + 2$

12. What is the slope of any line parallel to the line $2x - 3y = 7$?

A) $\frac{-2}{3}$

(B) -3

(C) $\frac{2}{3}$

(D) 2

(E) 3

13. If a system of 2 linear equations in variables has NO solution, and 1 of the equations is $3y - 2x - 9 = 0$, which of the following could be the equation of the other line?

(A) $y = \frac{2}{3}x + 2$

(B) $y = 2x + 9$

(C) $y = \frac{-3}{2}x + 2$

(D) $y = 2$

(E) $y = \frac{-2}{3}x + 2$

14. In the standard (x,y) coordinate plane, what is the distance between the line $x = -2$ and the y-axis?

(A) -2

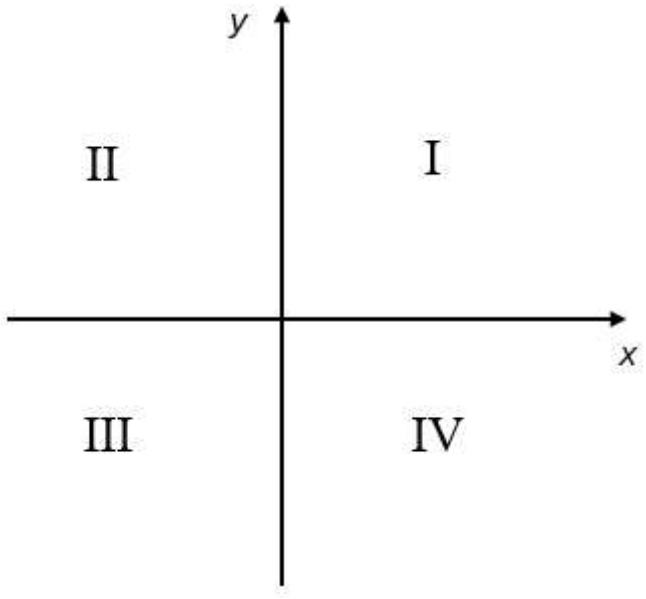
(B) $\sqrt{2}$

(C) 2
(D) 4
(E) -4

15. In the standard (x, y) coordinate plane, what is the distance between the line $y = 8$ and the x-axis?
(A) 8
(B) $\sqrt{8}$
(C) 4
(D) -8
(E) -4

16. If the point with coordinates $(-2, b)$ lies on the graph of $y = -4x + 5$. What is the value of b?
(A) 13
(B) 8
(C) 3
(D) 1
(E) -3

17. The graph of the line with equation $-2x - 3y = -15$ does NOT have points in what quadrant(s) of the standard (x, y) coordinate plane below?



(A) Quadrant I only

(B) Quadrant II only
(C) Quadrant III only
(D) Quadrant IV only
(E) Quadrant II and IV only

18. Which of the following is an equation of the line that passes through the point $(-4,5)$ and $(-8,-15)$ in the standard (x,y) coordinate plane?

(A) $5x - y = -25$
(B) $5x - 4y = 15$
(C) $x + y = 5$
(D) $\frac{5}{6}x = y + 5$
(E) $-4x + 5y = -15$

19. A line in the standard (x,y) coordinate plane has a slope of $\frac{2}{3}$ and passes through the points $(3,4)$ and $(t,-2)$. What is the value of t?

(A) 3
(B) 2
(C) 0
(D) -2
(E) -6

20. A line in the standard (x,y)coordinate plane is parallel to the x-axis and five units below it. Which of the following is an equation of this line?
(A) $y = -5$
(B) $x = -5$
(C) $y = -5x$
(D) $y = x - 5$
(E) $x = y - 5$

21. When graphed in the standard (x,y) coordinate plane, the lines $x = -5$ and $y = x - 5$ intersect at what point?

(A) $(-5,-10)$
(B) $(-5,-5)$
(C) $(-5,0)$

(D) $(0,-5)$
(E) $(0,0)$

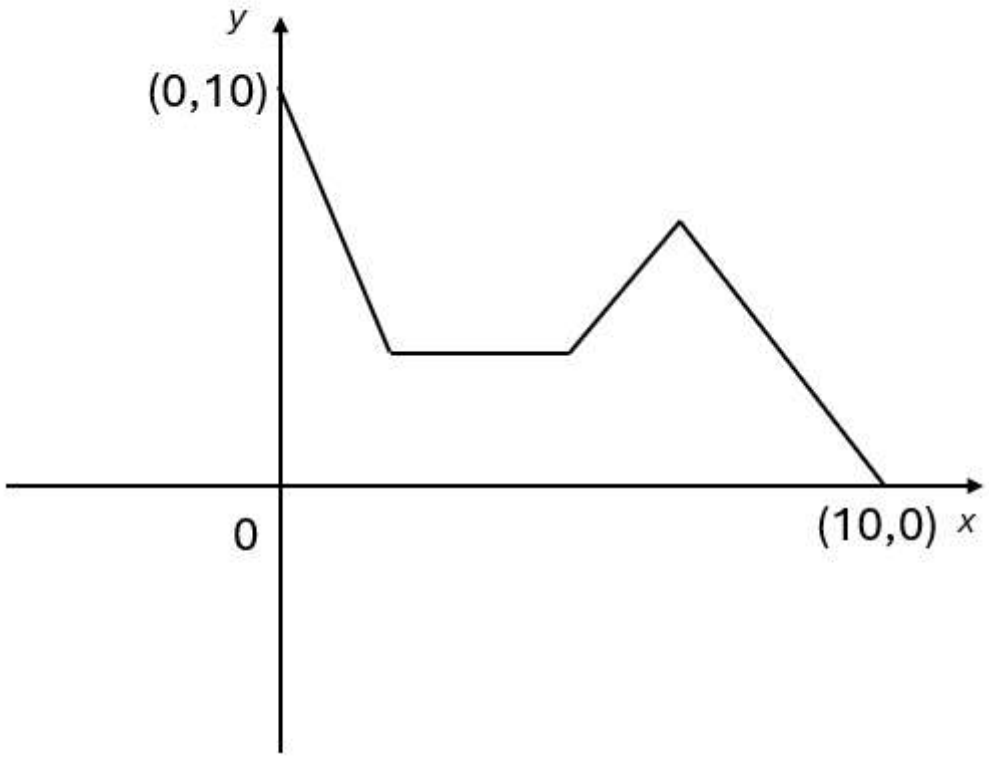
22. Which one of the following lines has the smallest slope?

(A) $y = x + 6$
(B) $y = 2x + 10$
(C) $y = \frac{1}{2}x - 1$
(D) $5y = 15x + 4$
(E) $7y = 3x - 7$

23. Given that $y - 5 = \frac{1}{2}x + 1$ is the equation of a line, at what point does the line cross the x-axis?

(A) -15
(B) -12
(C) 1
(D) 4
(E) 6

24. The graph below shows how the variable y varies with x in the standard (x, y)coordinate plane. What statement is true about how y varies with x?



(A) Starts at $y = 0$, decreases, remains steady, increases, decreases
(B) Starts at a maximum point, decreases, remains steady, increases, decreases
(C) Starts at a minimum point, increases, decreases, remains steady, increases.
(D) Starts at $y = 0$, decreases, reaches its lowest value, increases, decreases
(E) Starts at a maximum point, decreases, reaches its lowest value, increases, decreases

Answers

1. C
2. C
3. C
4. E
5. D
6. C
7. B
8. B
9. C
10. A
11. B
12. C
13. A
14. C
15. A
16. A
17. C
18. A
19. E
20. A
21. A
22. E
23. B
24. B