MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

Provide an appropriate response.

1) What is the equation of a vertical line through (-2, 5)? 1) _____

A) x = -2 B) y = 5 C) x = 5 D) y = -2

2) What is the equation of a horizontal line through (0, -1)? 2) _____

A) y = 0 B) x = 0 C) y = -1 D) x = -1

3) Given two points (x_1, y_1) and (x_2, y_2), where $x_1 \neq x_2$, what is the formula for the slope of the line connecting the two points? 3) _____

A) $m = \frac{y_2 + y_1}{x_2 + x_1}$ B) $m = \frac{y_2 - y_1}{x_2 - x_1}$ C) $m = \frac{y_2 - y_1}{x_1 - x_2}$ D) $m = \frac{x_2 - x_1}{y_2 - y_1}$

SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.

4) y = x 4) _____
y = -x
y = -5x
Graph the set of equations on the same grid. Compare the slopes, y-intercepts, and their effects on the graphs.

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

5) Given the slopes of three lines, $m_1 = 2$, $m_2 = 5$, $m_3 = -4$, which line would you say is the steepest? Why? 5) _____

A) The line with a slope of 5 is the steepest, because the absolute value of 5 is larger than the absolute values of 2 and -4.
B) The line with a slope of -4 is the steepest, because the absolute value of -4 is more negative than the absolute values of 2 and 5.
C) The line with a slope of -4 is the steepest, because -4 is more negative than 2 and 5.
D) The line with a slope of 2 is the steepest, because the absolute value of 2 is smaller than the absolute values of 5 and -4.

6) What is the relationship between the slopes of two parallel lines? 6) _____

A) There is no general relationship, because the y-intercepts can be different.
B) One slope is the negative of the other.
C) They are equal.
D) One slope is the reciprocal of the other.

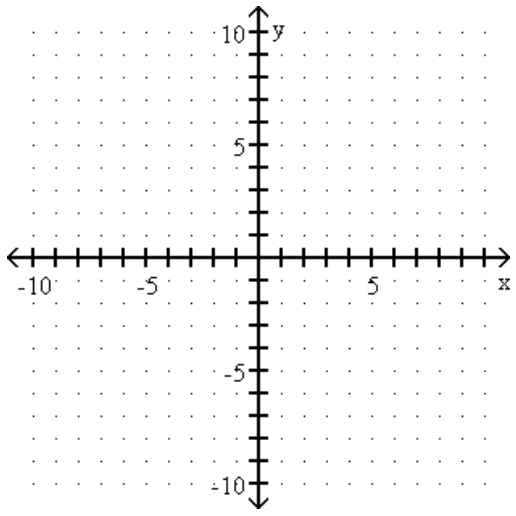
SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.

7) y = -x 7) _____
y = -x + 5
y = -x - 5
Graph the set of equations on the same grid. Compare the slopes, y-intercepts, and their effects on the graphs.

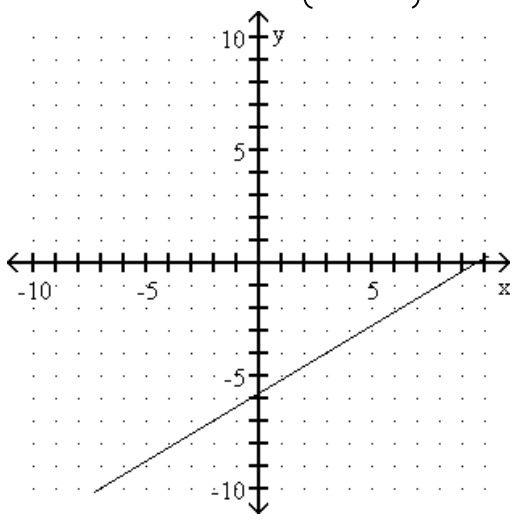
MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

Determine the slope and the y-intercept. Then graph the equation.

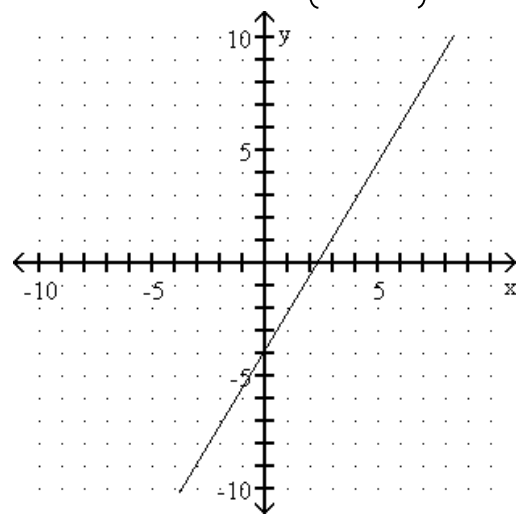
8) $3x - 5y = 29$ 8) _____



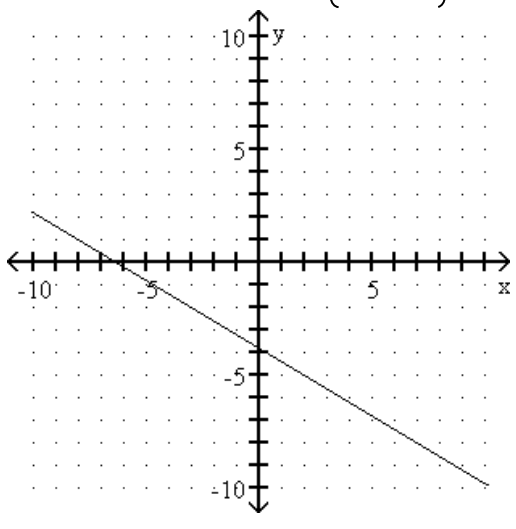
A) $m = \frac{3}{5}$; y-intercept: $\left(0, -\frac{29}{5}\right)$



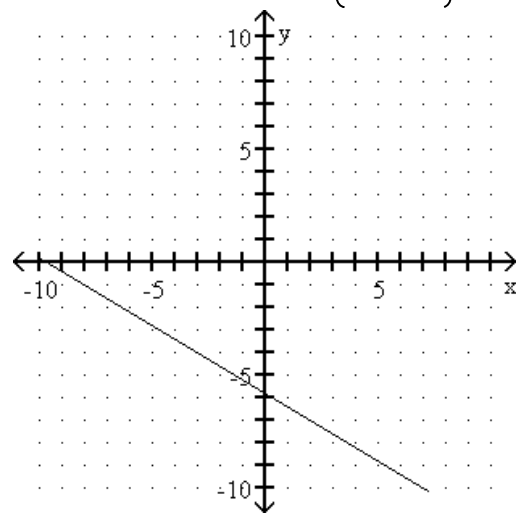
B) $m = \frac{5}{3}$; y-intercept: $\left(0, -\frac{19}{5}\right)$



C) $m = -\frac{3}{5}$; y-intercept: $\left(0, -\frac{19}{5}\right)$

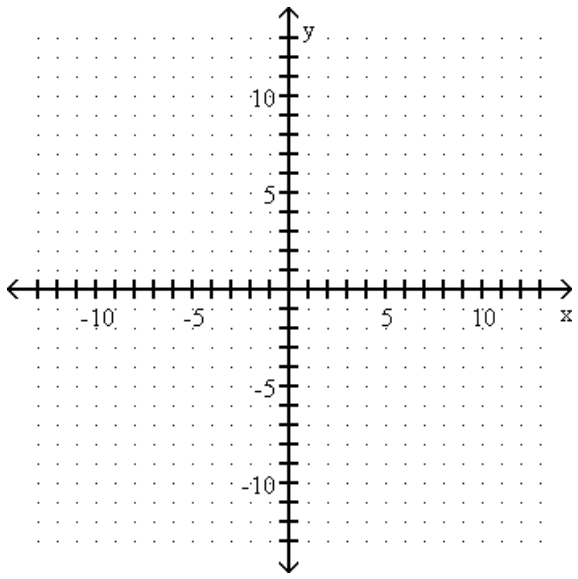


D) $m = -\frac{3}{5}$; y-intercept: $\left(0, -\frac{29}{5}\right)$

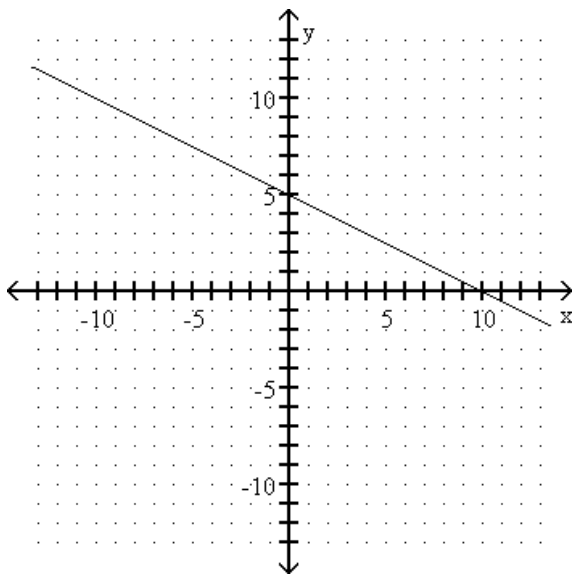


9) $y = -\frac{1}{2}x - 5$

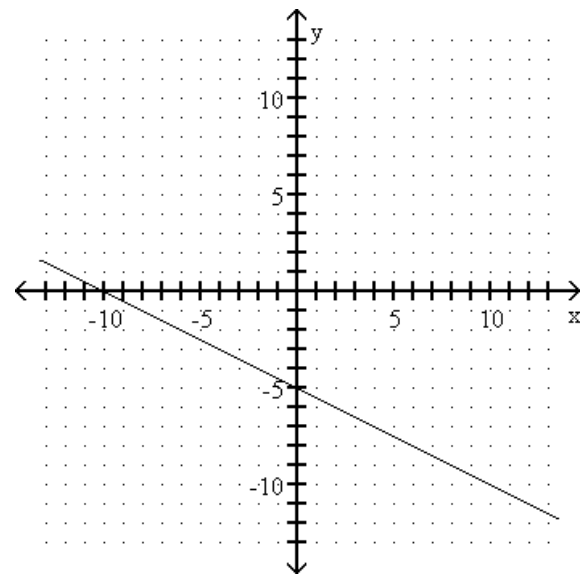
9) _____



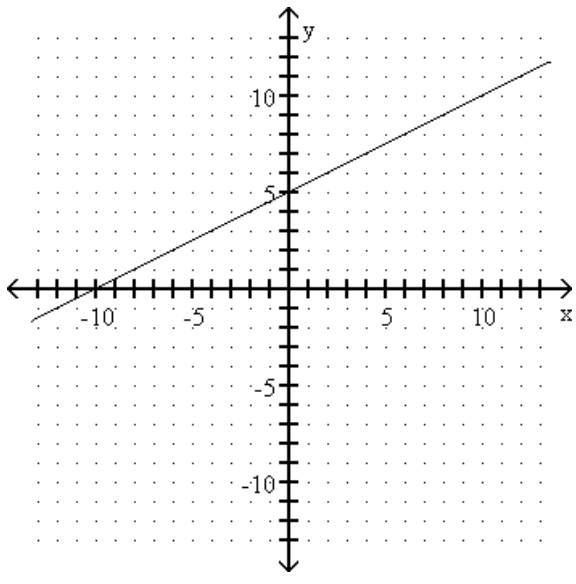
A) $m = -\frac{1}{2}$; y-intercept: (0, 5)



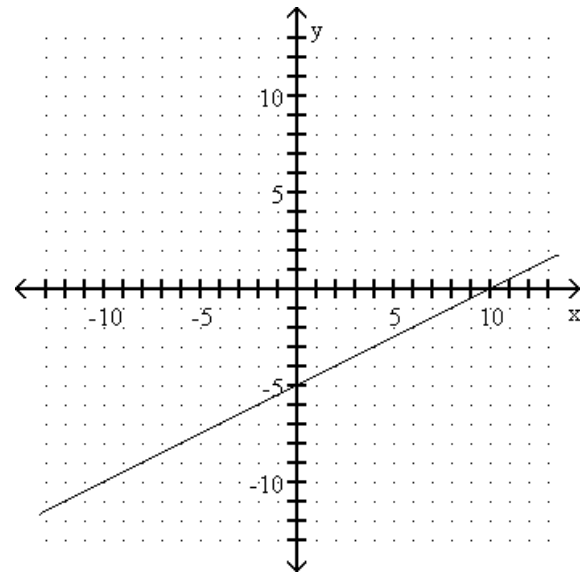
B) $m = -\frac{1}{2}$; y-intercept: (0, -5)



C) $m = \frac{1}{2}$; y-intercept: (0, 5)

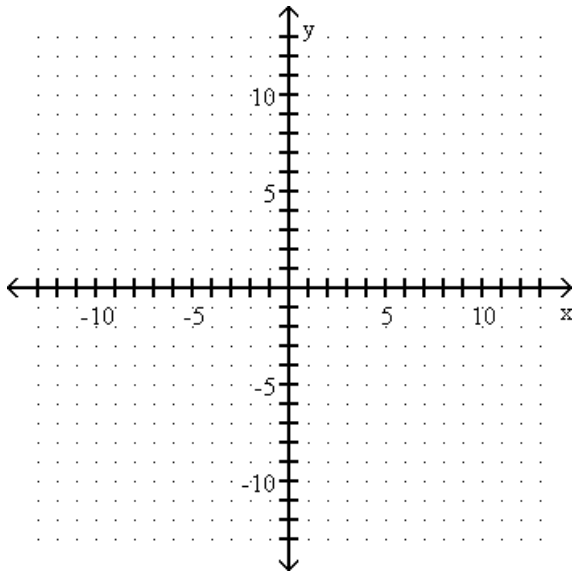


D) $m = \frac{1}{2}$; y-intercept: (0, -5)

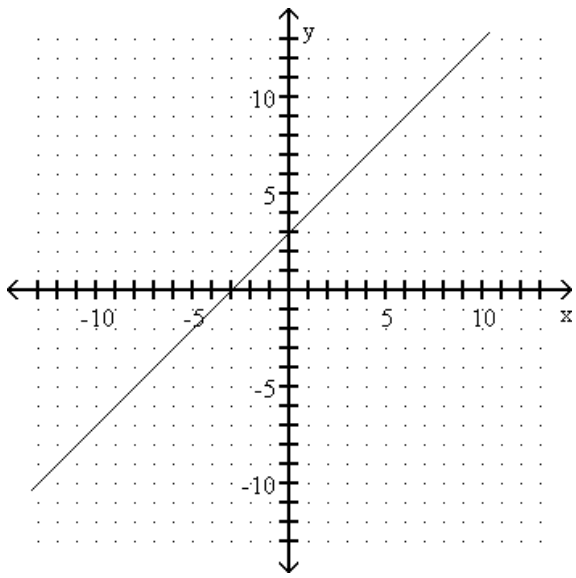


10) x + y = -3

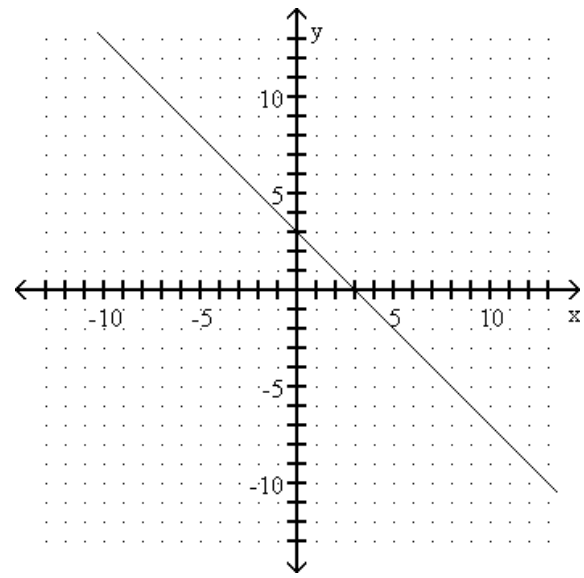
10) _____



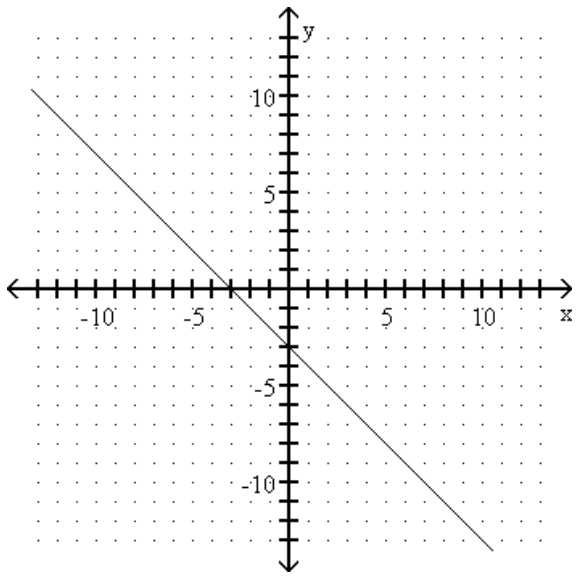
A) m = 1; y-intercept: (0, 3)



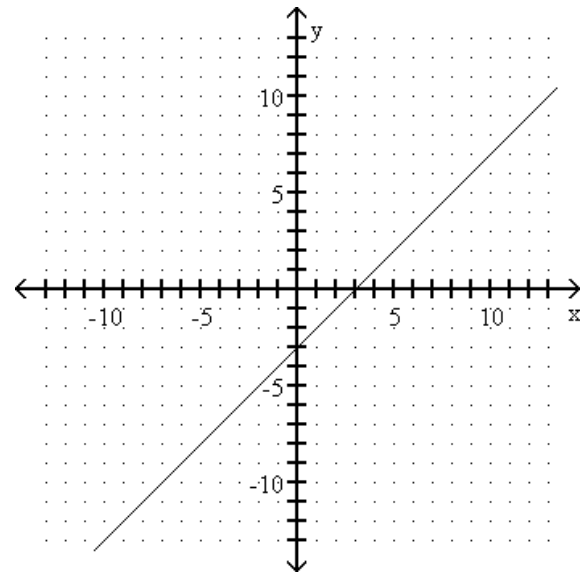
B) m = -1; y-intercept: (0, 3)



C) m = -1; y-intercept: (0, -3)

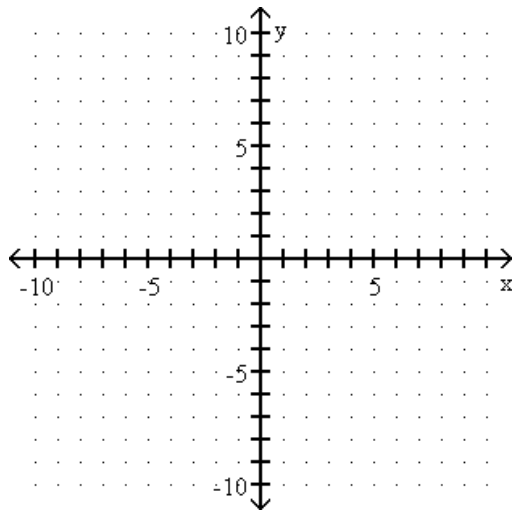


D) m = 1; y-intercept: (0, -3)

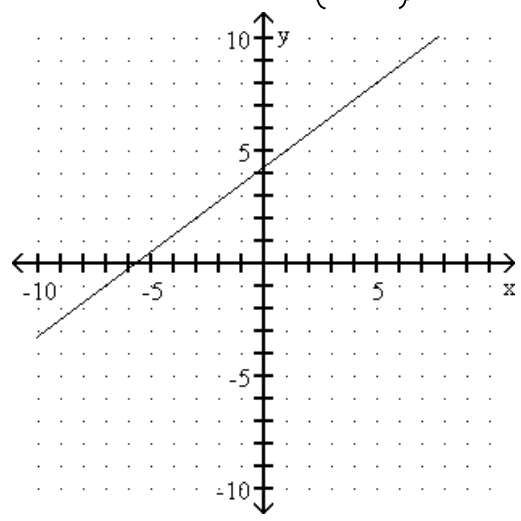


11) $3x + 4y = 25$

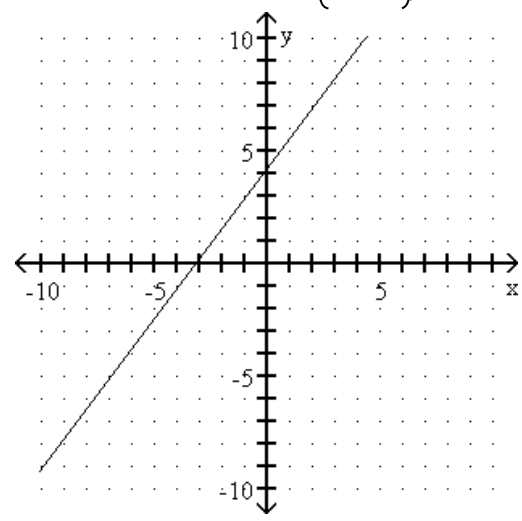
11) _____



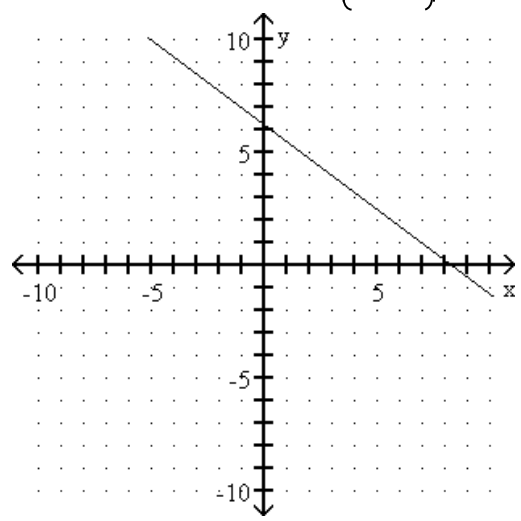
A) $m = \frac{3}{4}$; y-intercept: $\left(0, \frac{17}{4}\right)$



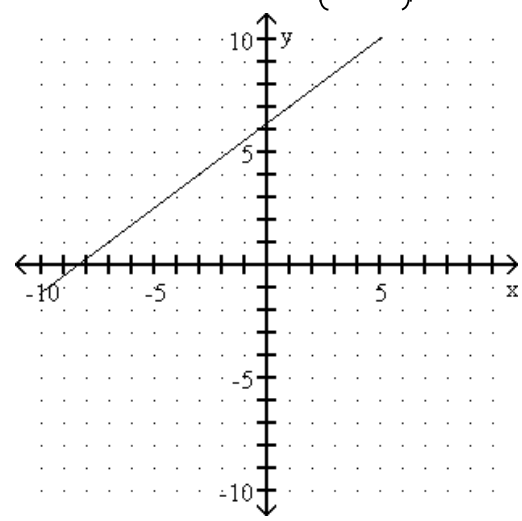
B) $m = \frac{4}{3}$; y-intercept: $\left(0, \frac{17}{4}\right)$



C) $m = -\frac{3}{4}$; y-intercept: $\left(0, \frac{25}{4}\right)$

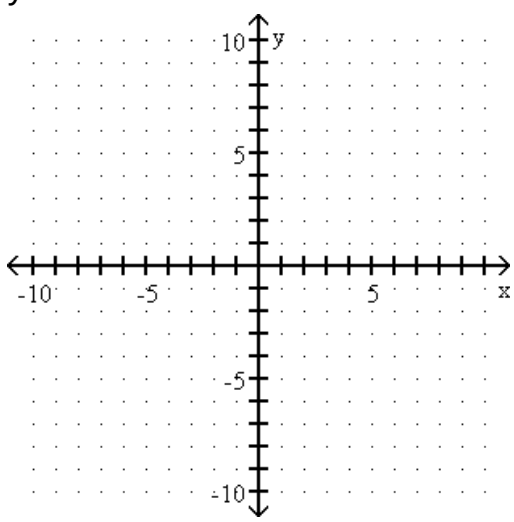


D) $m = \frac{3}{4}$; y-intercept: $\left(0, \frac{25}{4}\right)$



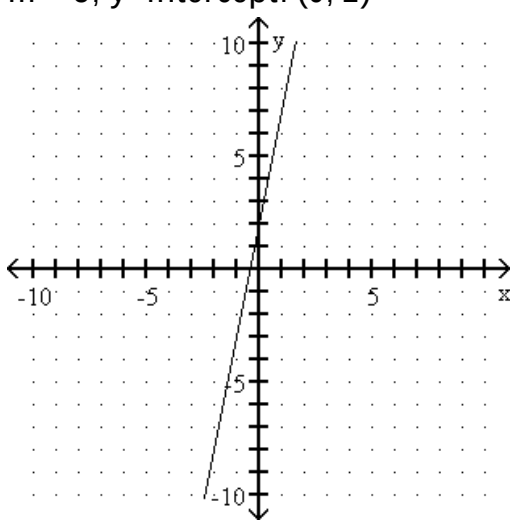
12) y = 2x - 5

12) _____

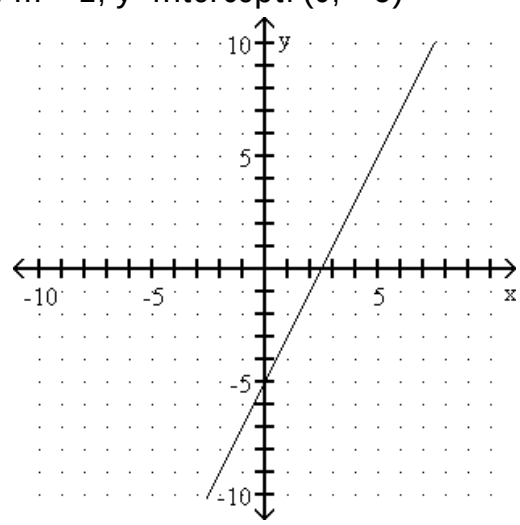


A) m = 5, y-intercept: (0, 2)

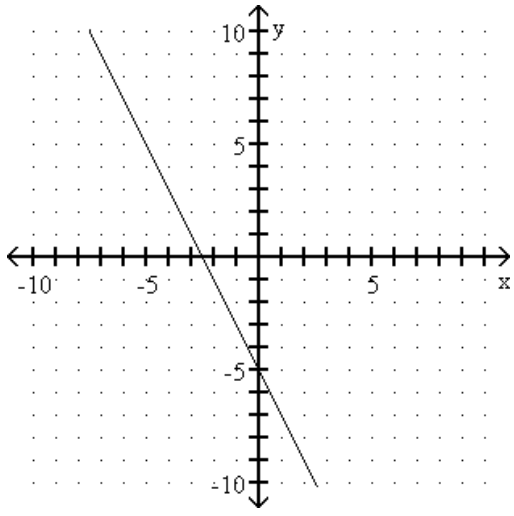
B) m = 2, y-intercept: (0, - 5)

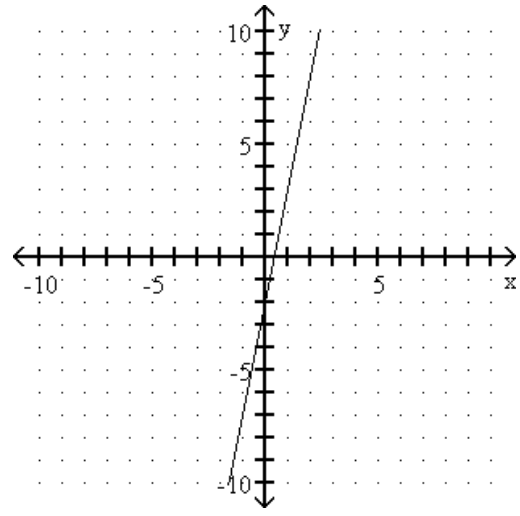


C) m = 5, y-intercept: (0, 2)



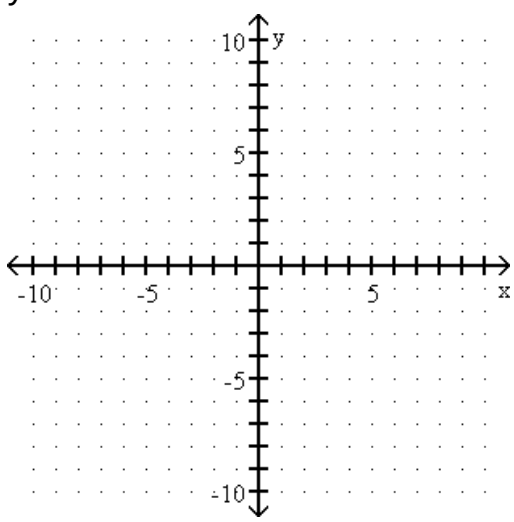
D) m = 2, y-intercept: (0, 5)





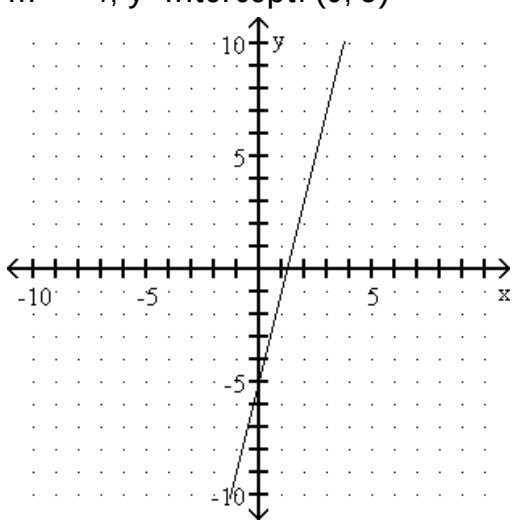
13) y = -4x + 5

13) _____

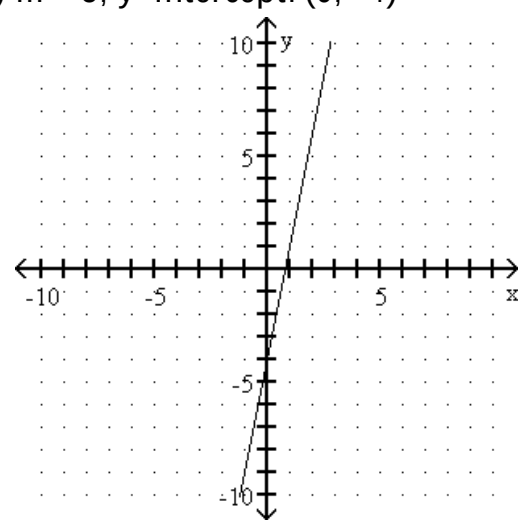


A) m = -4, y-intercept: (0, 5)

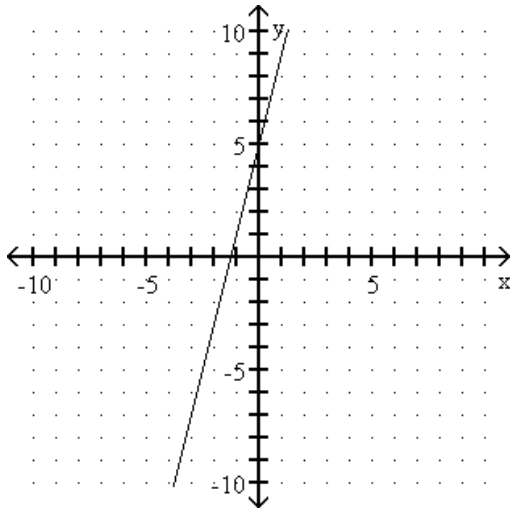
B) m = 5, y-intercept: (0, -4)

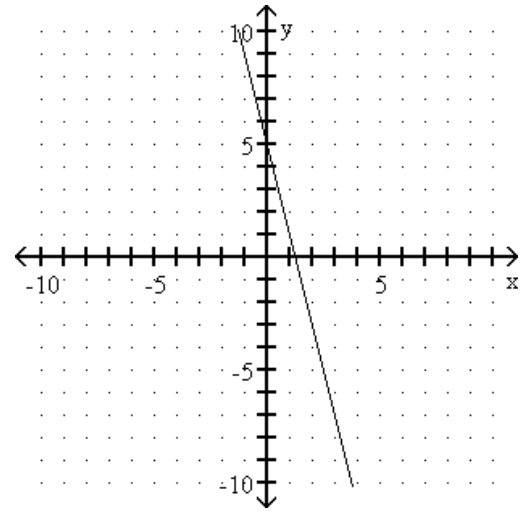


C) m = 5, y-intercept: (0, -4)



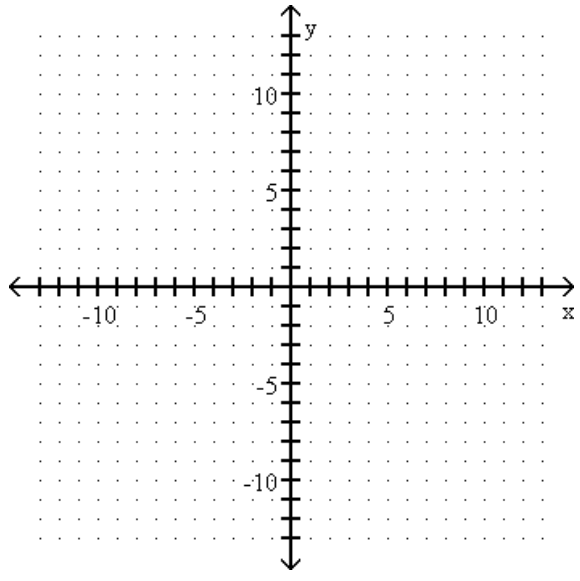
D) m = -4, y-intercept: (0, 5)



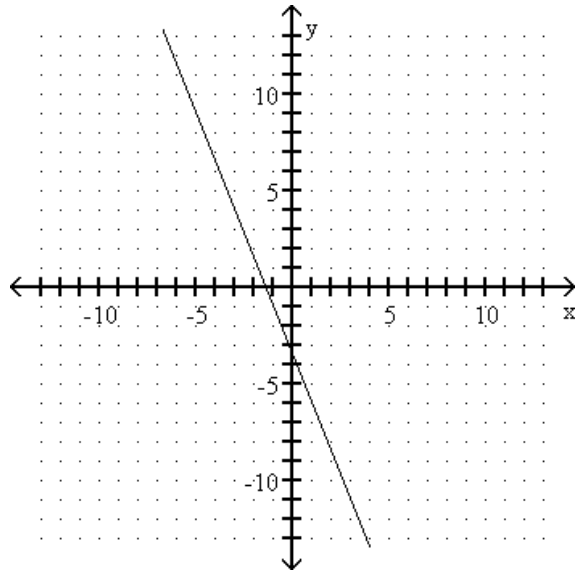


14) 5x - 2y + 7 = 0

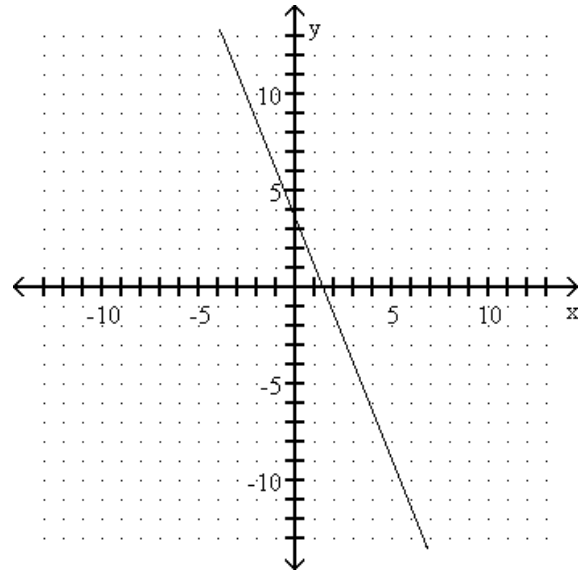
14) _____



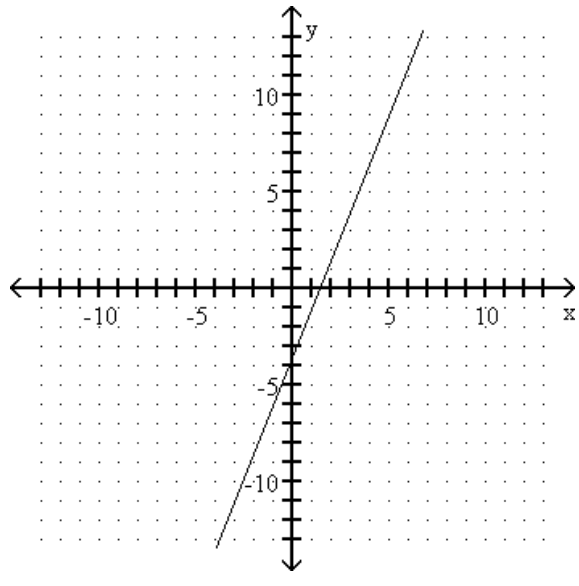
A) m = $-\frac{5}{2}$; y-intercept: $(0, -\frac{7}{2})$



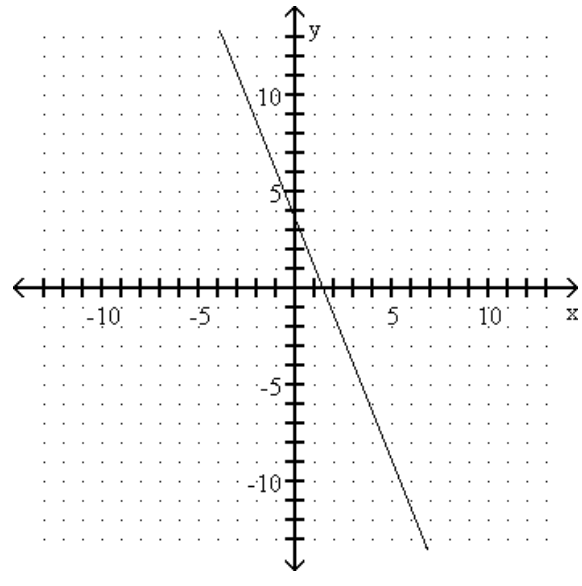
B) m = $-\frac{5}{2}$; y-intercept: $(0, \frac{7}{2})$



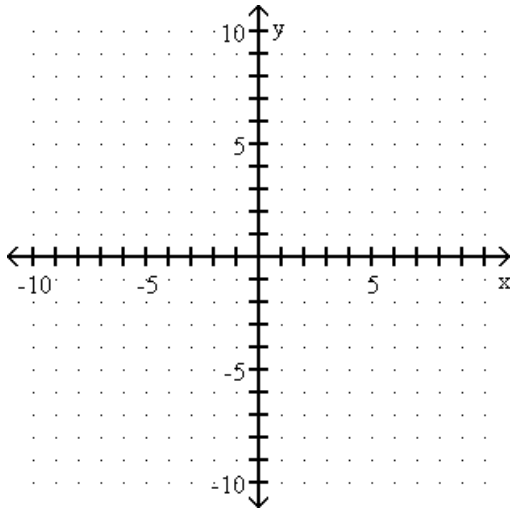
C) m = $\frac{5}{2}$; y-intercept: $(0, -\frac{7}{2})$



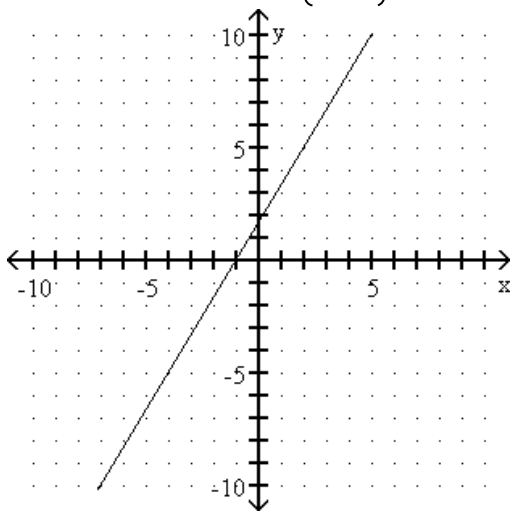
D) m = $\frac{5}{2}$; y-intercept: $(0, \frac{7}{2})$



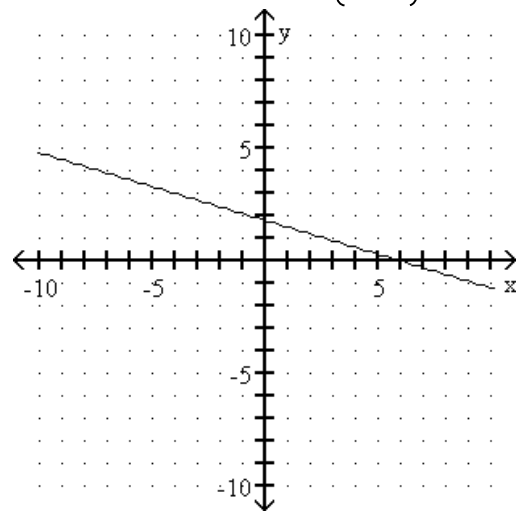
15) $-5y = -3x - 19$ 15) _____



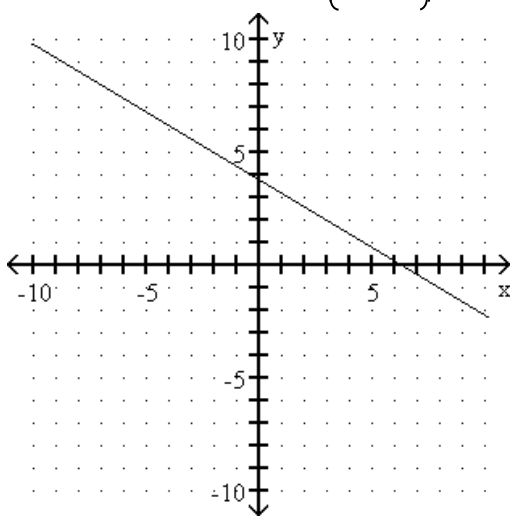
A) $m = \frac{5}{3}$; y-intercept: $\left(0, \frac{9}{5}\right)$



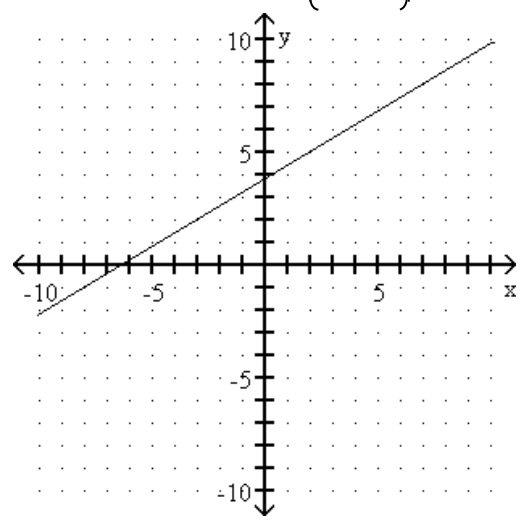
B) $m = -\frac{3}{5}$; y-intercept: $\left(0, \frac{9}{5}\right)$



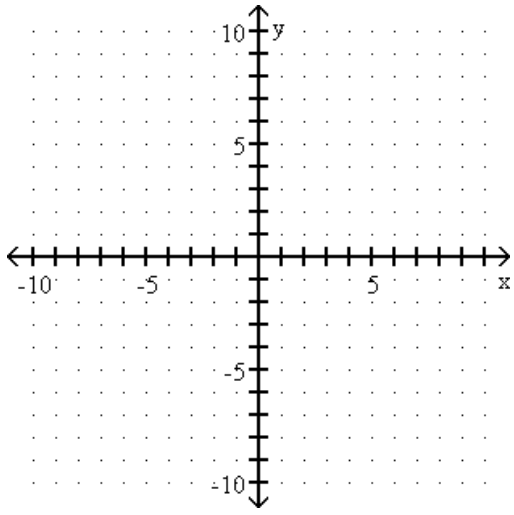
C) $m = -\frac{3}{5}$; y-intercept: $\left(0, \frac{19}{5}\right)$



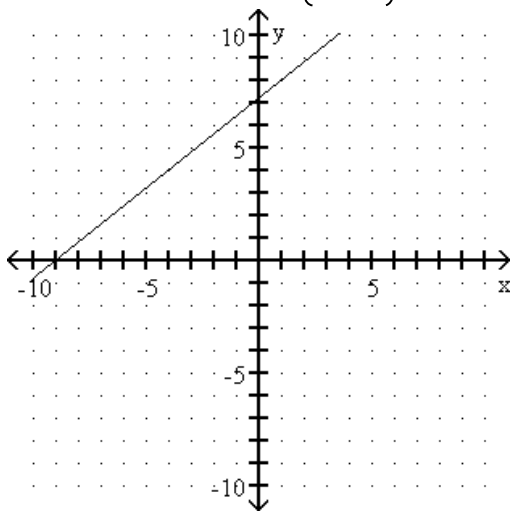
D) $m = \frac{3}{5}$; y-intercept: $\left(0, \frac{19}{5}\right)$



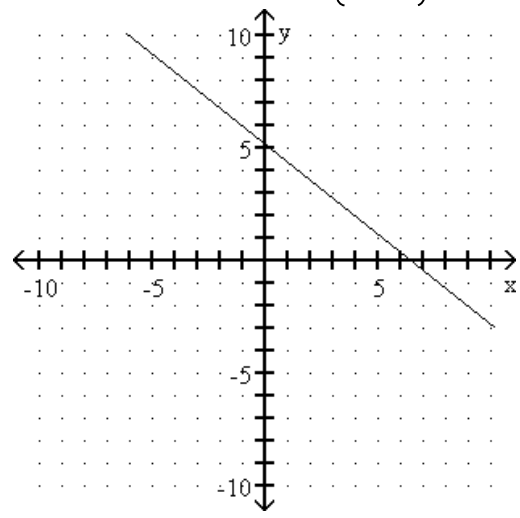
16) $4x - 5y = -36$ 16) _____



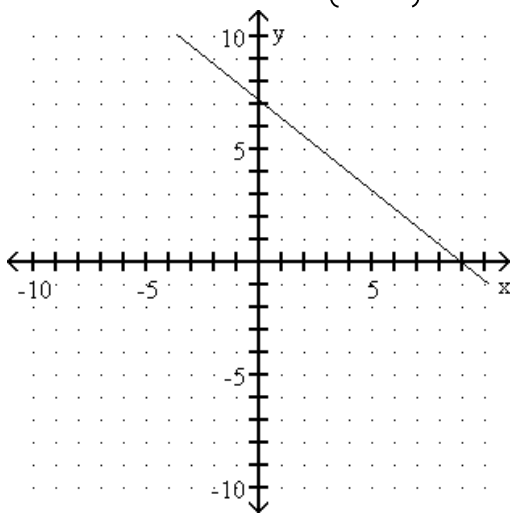
A) $m = \frac{4}{5}$; y-intercept: $\left(0, \frac{36}{5}\right)$



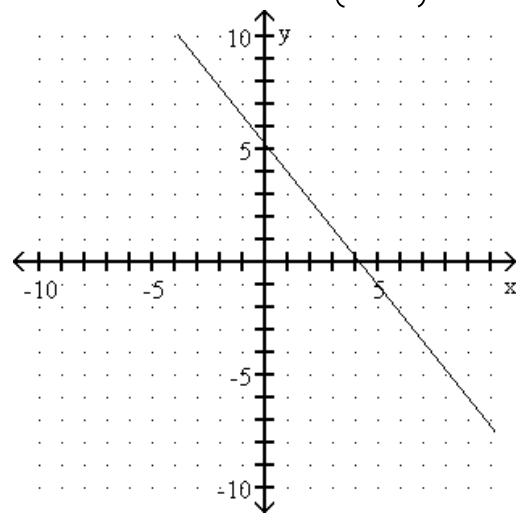
B) $m = -\frac{4}{5}$; y-intercept: $\left(0, \frac{26}{5}\right)$



C) $m = -\frac{4}{5}$; y-intercept: $\left(0, \frac{36}{5}\right)$

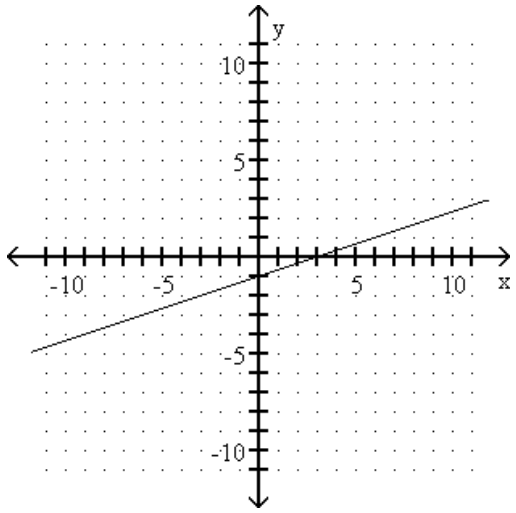


D) $m = -\frac{5}{4}$; y-intercept: $\left(0, \frac{26}{5}\right)$



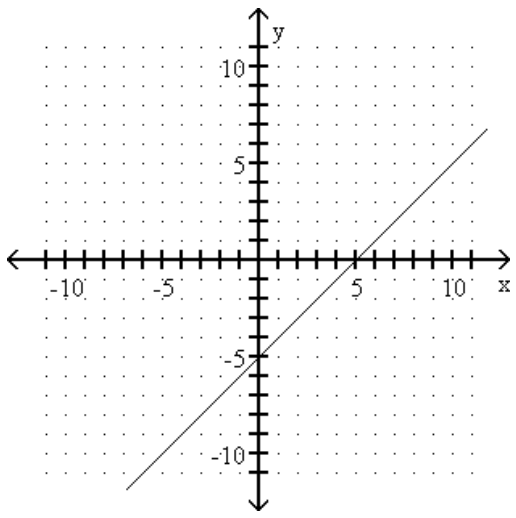
Find the slope of the line.

17) 17) _____



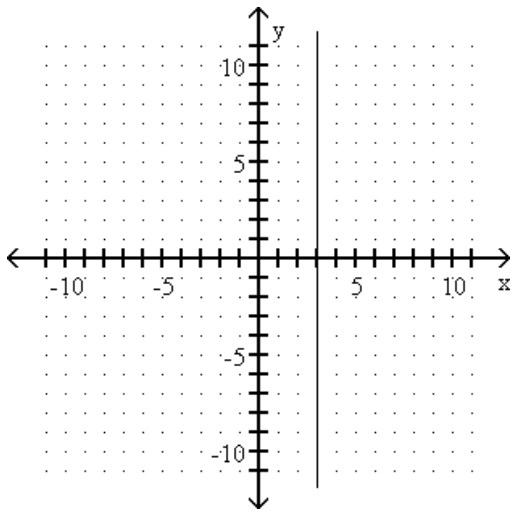
A) $\frac{1}{3}$ B) -3 C) $-\frac{1}{3}$ D) 3

18) 18) _____



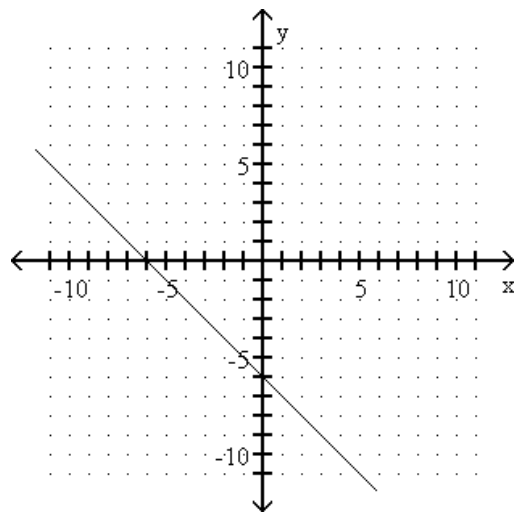
A) -9 B) 1 C) -5 D) -1

19) 19) _____



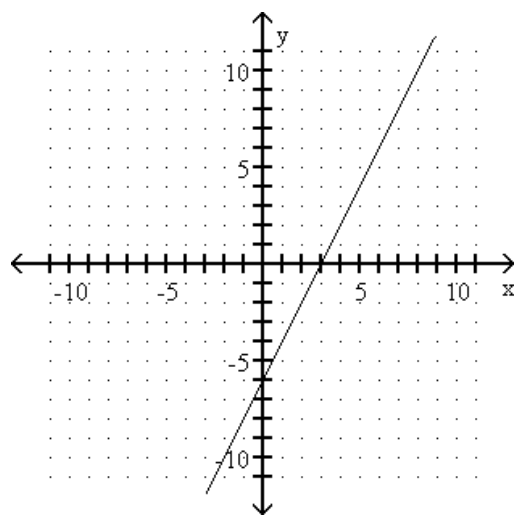
A) Undefined B) $\frac{3}{2}$ C) 0 D) 3

20) 20) _____



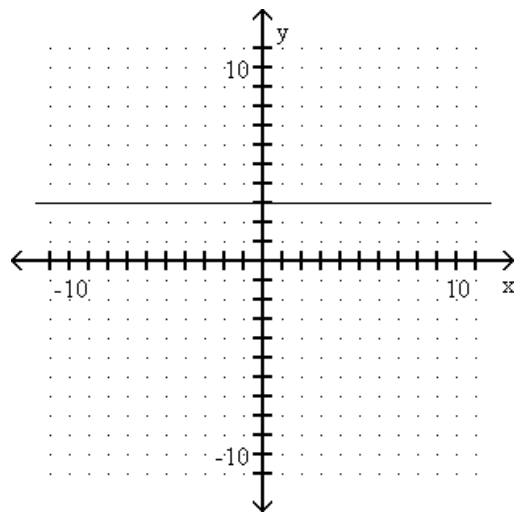
A) -6 B) 1 C) 6 D) -1

21) 21) _____



A) -2 B) 2 C) $\frac{1}{2}$ D) $-\frac{1}{2}$

22) 22) _____



A) 3 B) 0 C) $\frac{1}{2}$ D) Undefined

Find the slope of the line through the given points.

23) (-3, -5), (-4, -2) 23) _____

A) $-\frac{1}{3}$ B) $\frac{3}{10}$ C) 3 D) - 3

24) (8, -2), (8, -8) 24) _____

A) -6 B) $\frac{6}{11}$ C) 0 D) Undefined

25) (3, 2), (-1, 2) 25) _____

A) 0 B) 1 C) 3 D) Undefined

26) (-3, -3), (2, 4) 26) _____

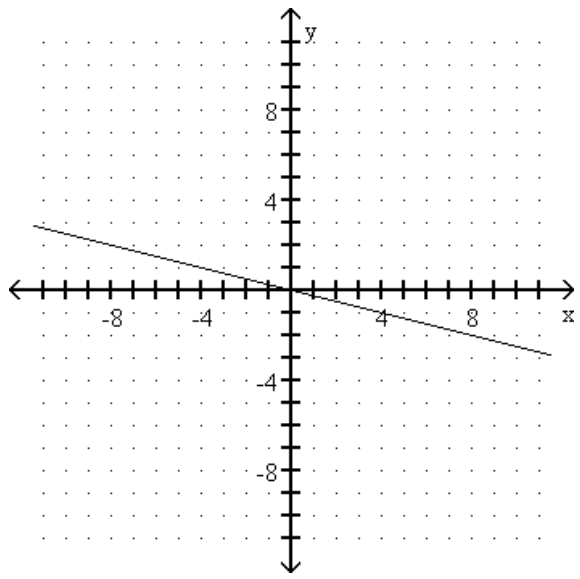
A) $-\frac{7}{5}$ B) $\frac{7}{10}$ C) $\frac{5}{7}$ D) $\frac{7}{5}$

27) (7, -5), (-2, -7) 27) _____

A) $\frac{5}{13}$ B) $\frac{13}{5}$ C) $\frac{2}{9}$ D) 0

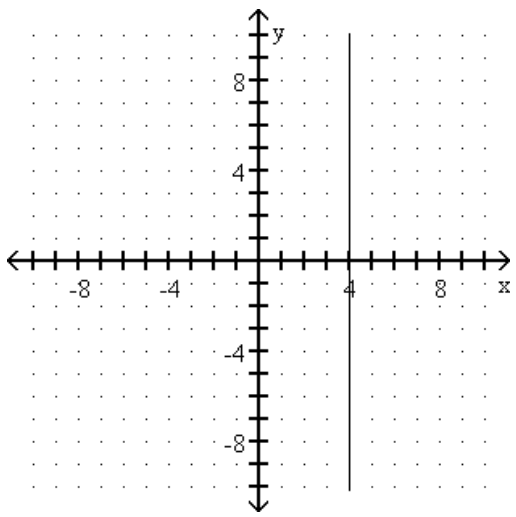
Find the y-intercept.

28) 28) _____



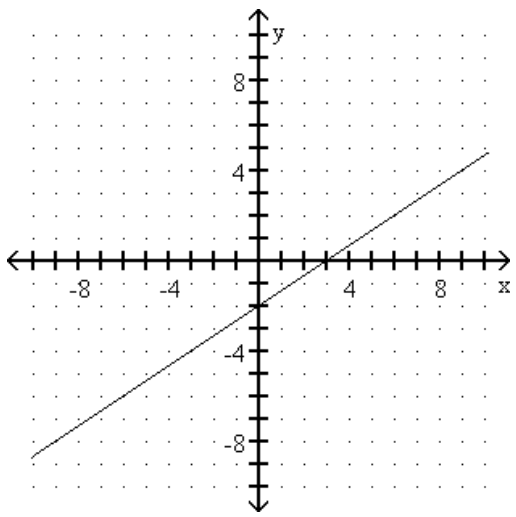
A) (0, 0) B) (0, 4) C) (0, -4) D) No y-intercept

29) 29) _____



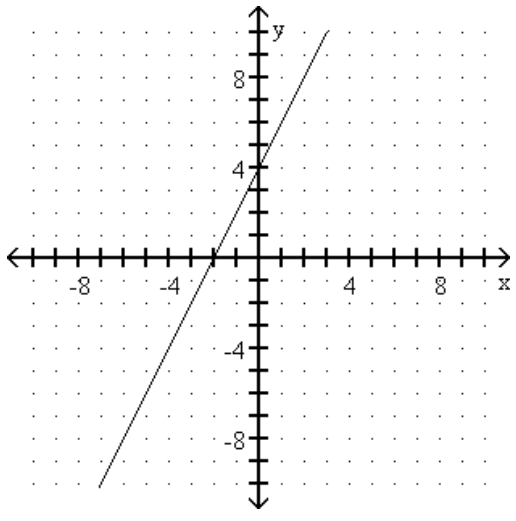
A) (0, 0) B) No y-intercept C) (0, 4) D) (4, 0)

30) 30) _____



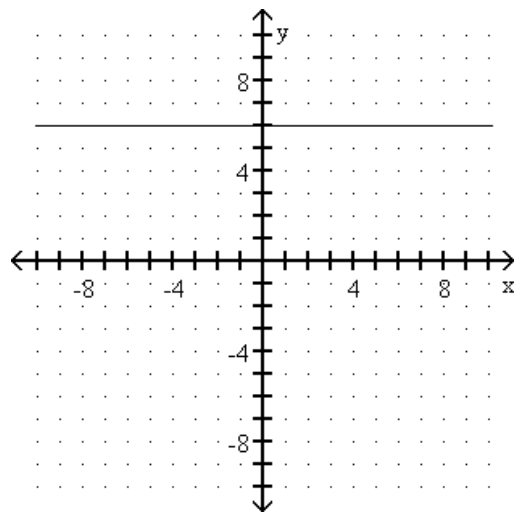
A) (0, -2) B) (0, 3) C) (0, 2) D) (0, -3)

31) 31) _____



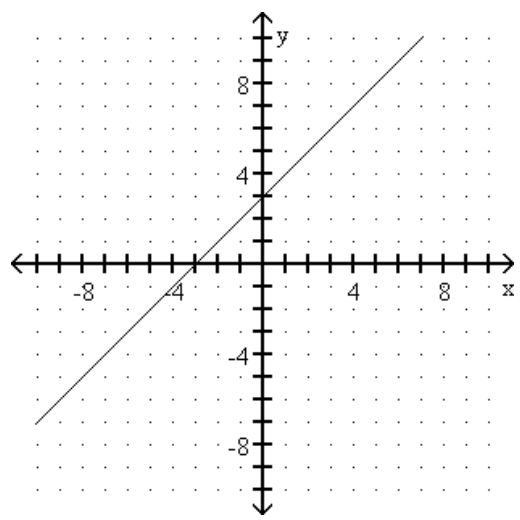
A) (0, -4) B) (0, 4) C) (2, 0) D) (-2, 0)

32) 32) _____



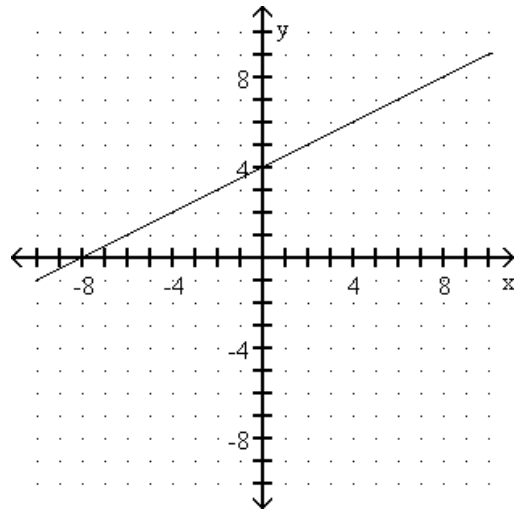
A) (0, 0) B) (6, 0) C) (0, 6) D) No y-intercept

33) 33) _____



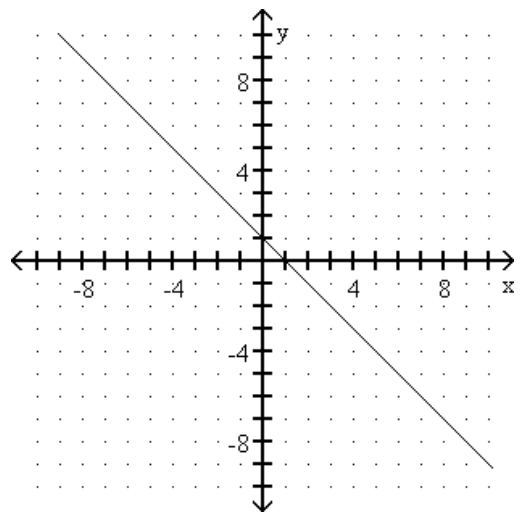
A) (-3, 0) B) (3, 0) C) (0, 3) D) (0, -3)

34) 34) _____



A) (0, 8) B) (0, -4) C) (0, -8) D) (0, 4)

35) 35) _____

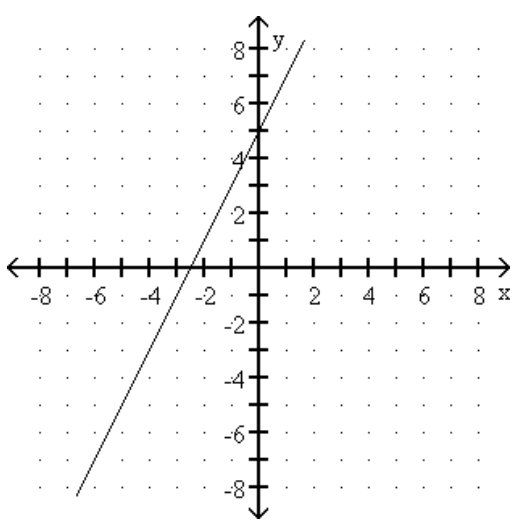


A) (1, 0) B) (0, 1) C) (0, -1) D) (0, 0)

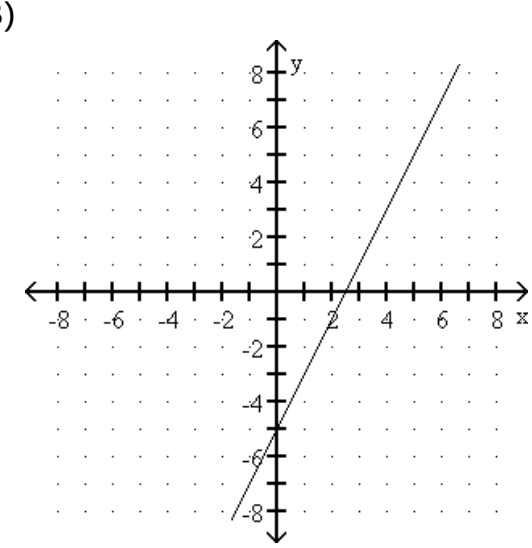
Match the equation with the appropriate graph.

36) y = -2x - 5 36) _____

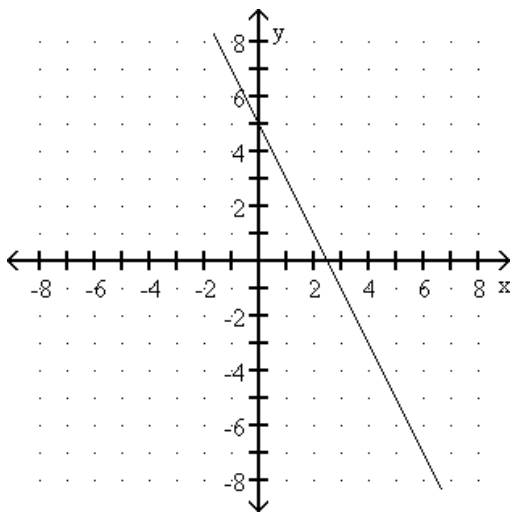
A)



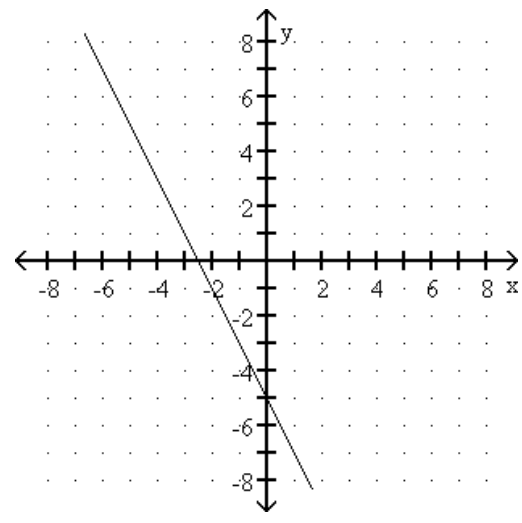
B)



C)



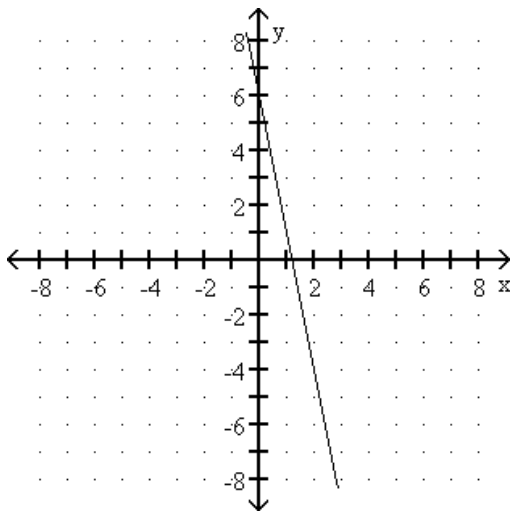
D)



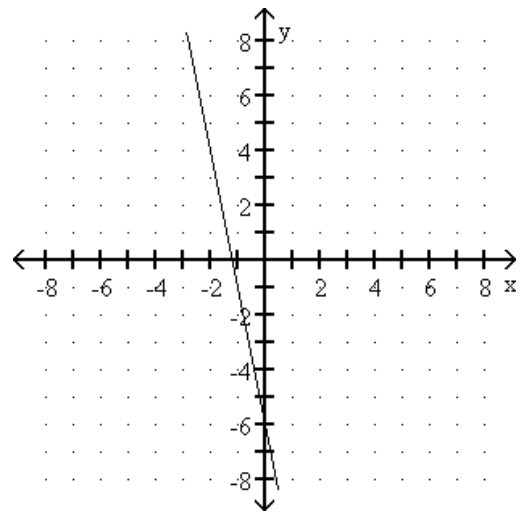
37) y = 5x + 6

37) _____

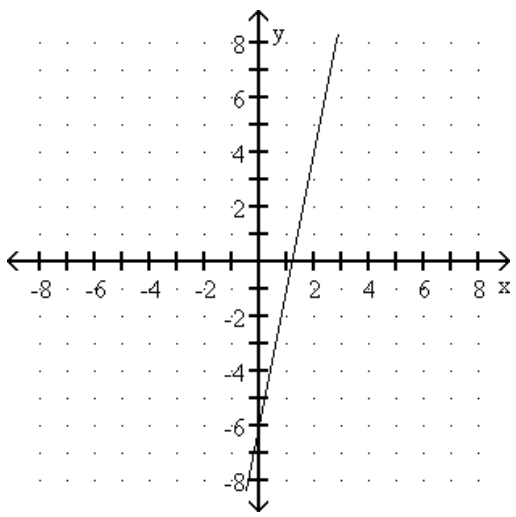
A)



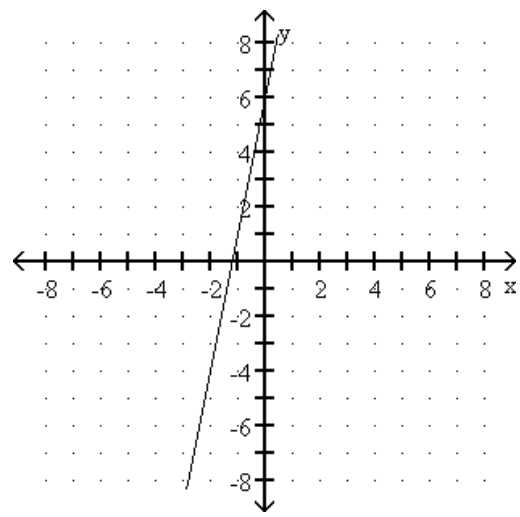
B)



C)



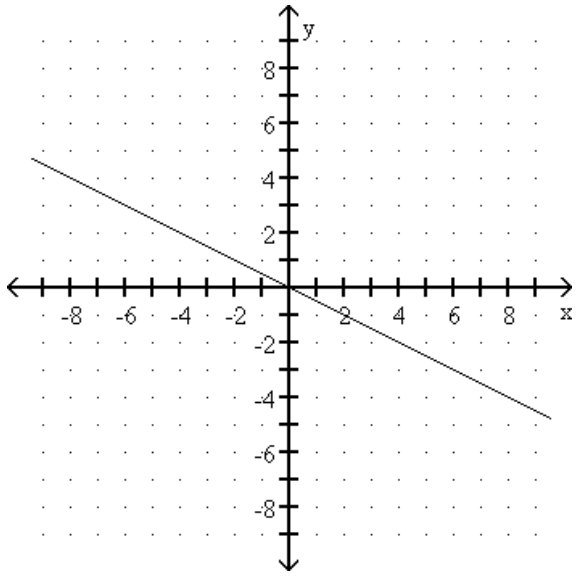
D)



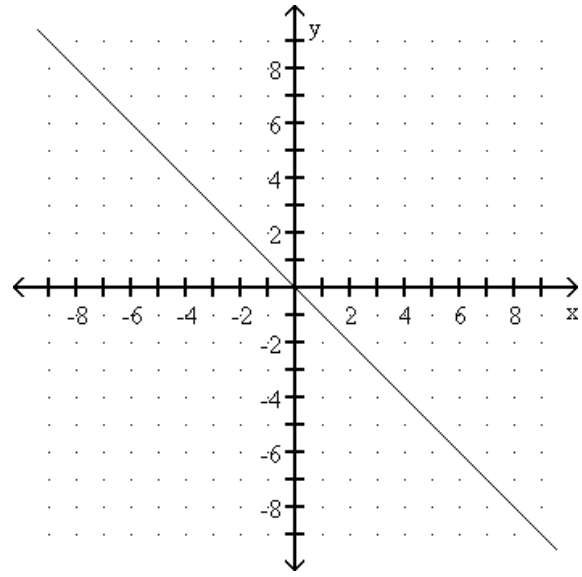
38) x = - y

38) _____

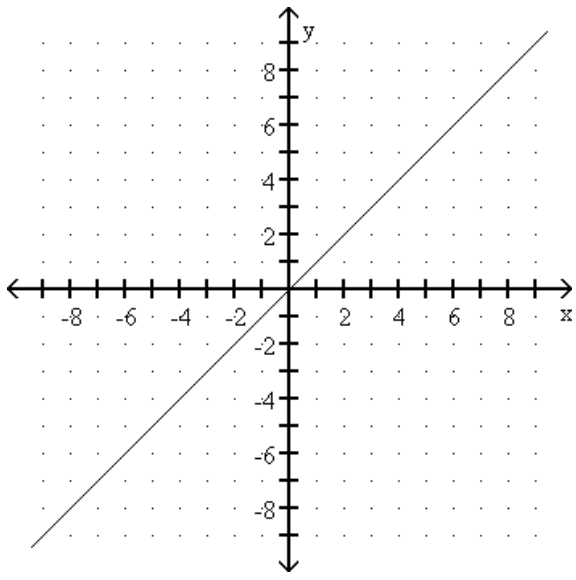
A)


y
x
-8 -6 -4 -2 2 4 6 8
8 6 4 2 -2 -4 -6 -8

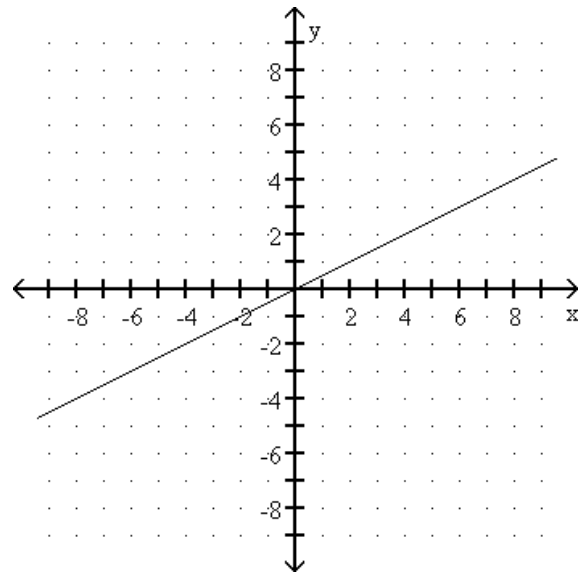
B)


y
x
-8 -6 -4 -2 2 4 6 8
8 6 4 2 -2 -4 -6 -8

C)


y
x
-8 -6 -4 -2 2 4 6 8
8 6 4 2 -2 -4 -6 -8

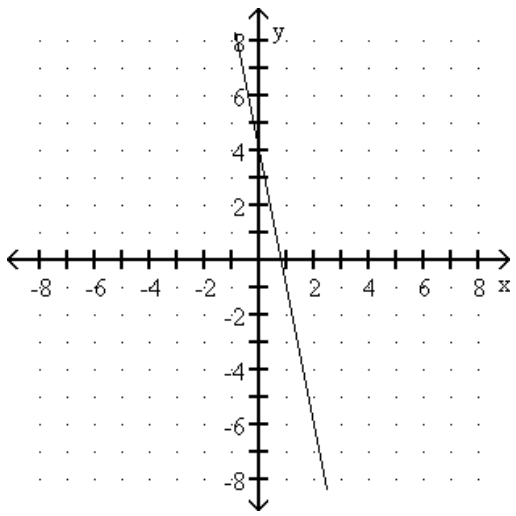
D)


y
x
-8 -6 -4 -2 2 4 6 8
8 6 4 2 -2 -4 -6 -8

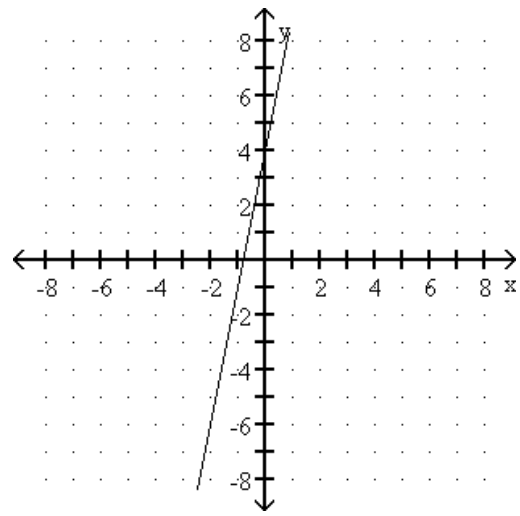
39) y = 5x - 4

39) _____

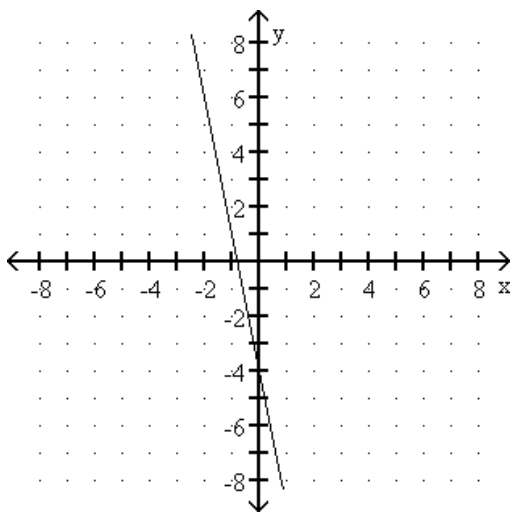
A)



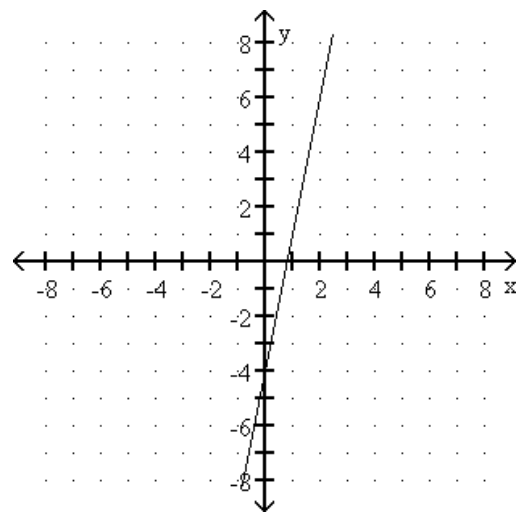
B)



C)



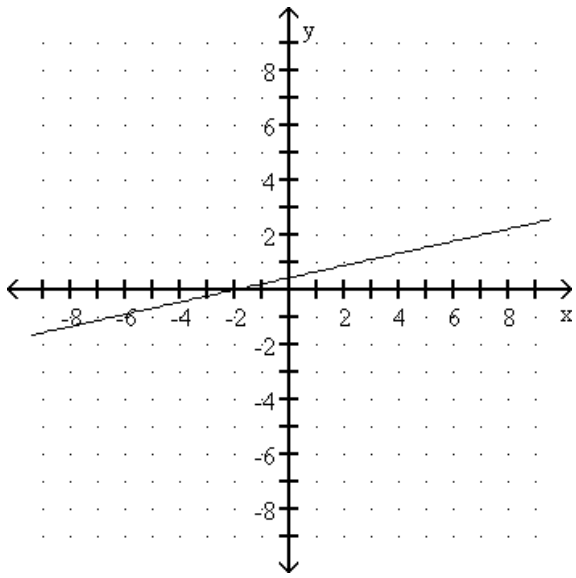
D)



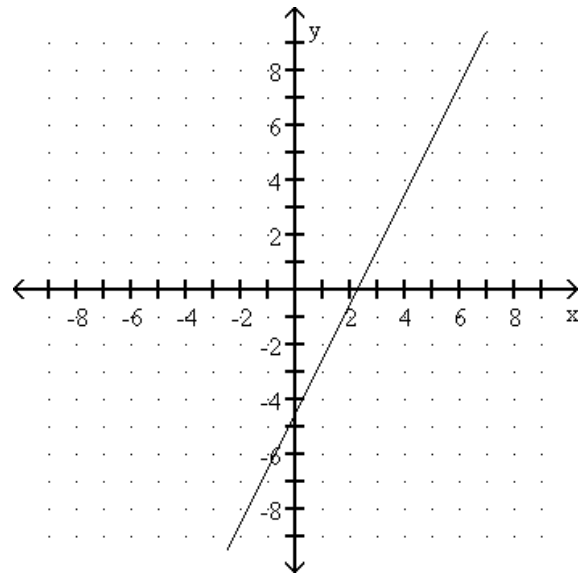
40) 2x - 4y = -9

40) _____

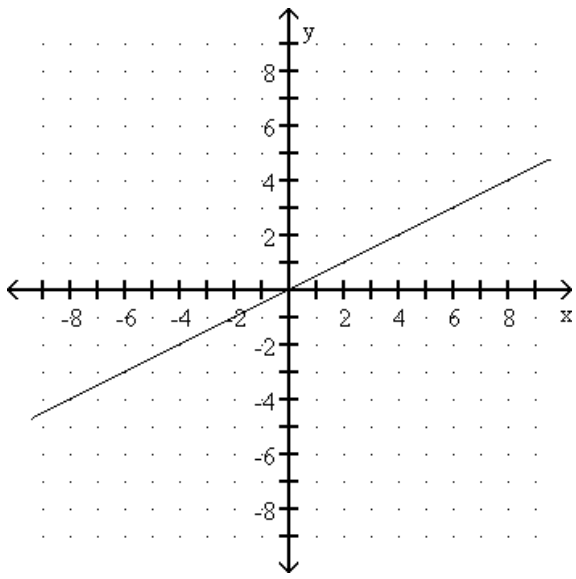
A)



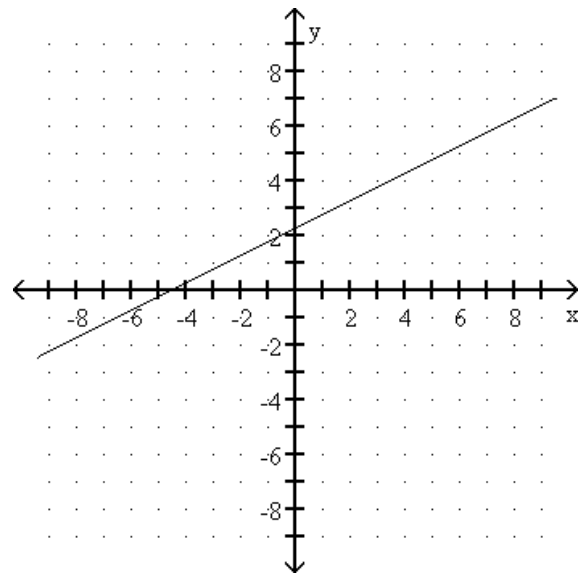
B)



C)



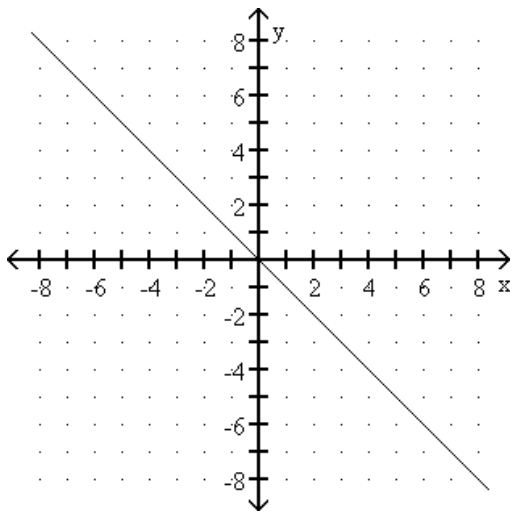
D)



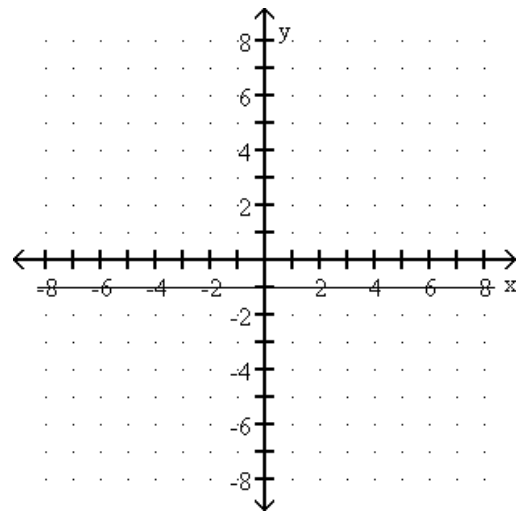
41) y = -1

41) _____

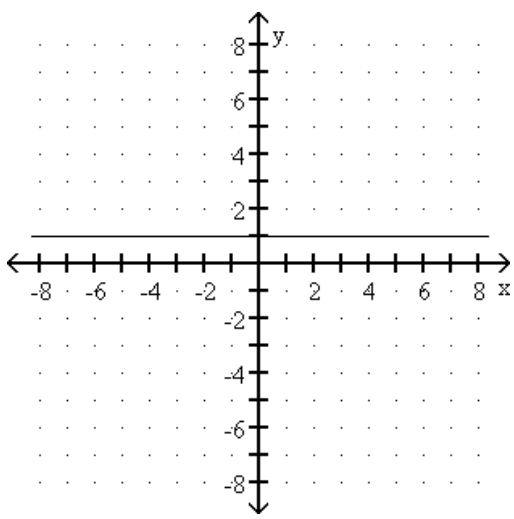
A)


y
x
8
6
4
2
-2
-4
-6
-8
-8
-6
-4
-2
2
4
6
8

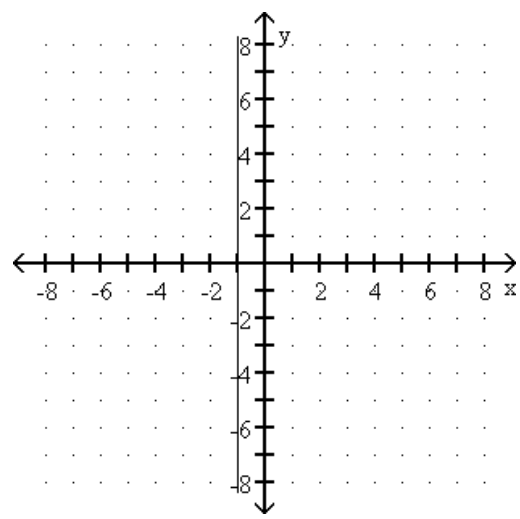
B)


y
x
8
6
4
2
-2
-4
-6
-8
-8
-6
-4
-2
2
4
6
8

C)

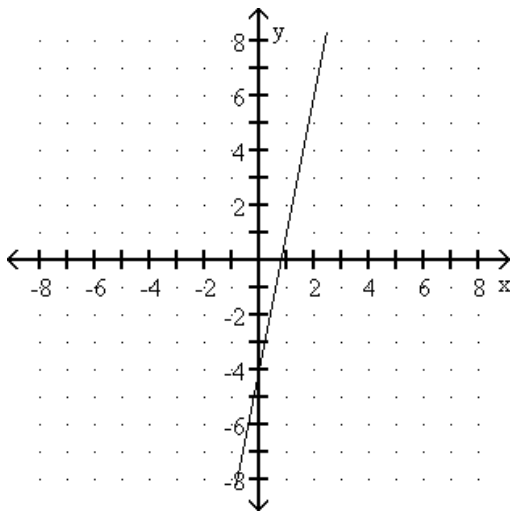

y
x
8
6
4
2
-2
-4
-6
-8
-8
-6
-4
-2
2
4
6
8

D)

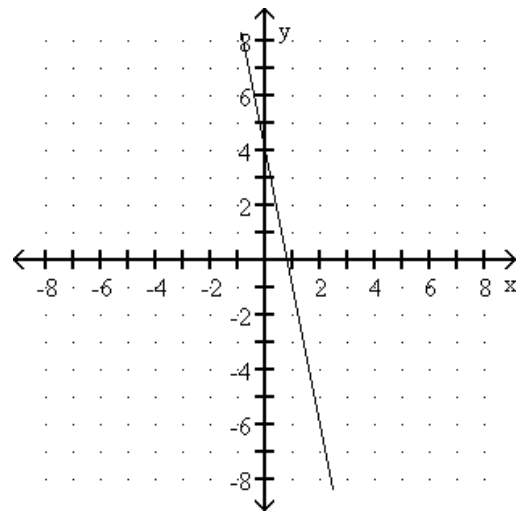

y
x
8
6
4
2
-2
-4
-6
-8
-8
-6
-4
-2
2
4
6
8

42) y = -5x + 4 42) _____

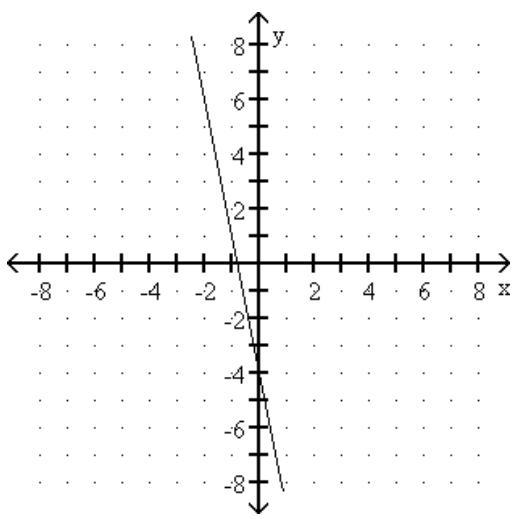
A)



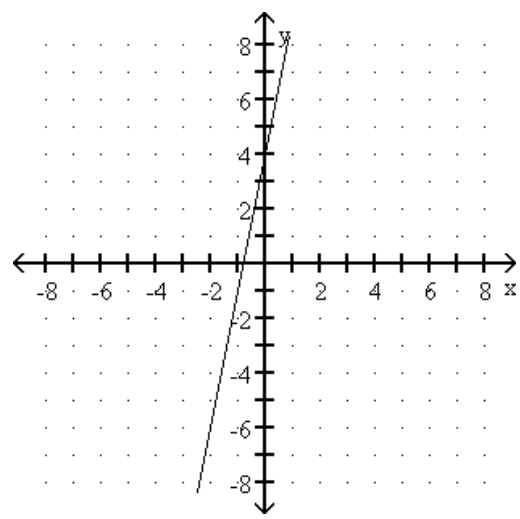
B)



C)



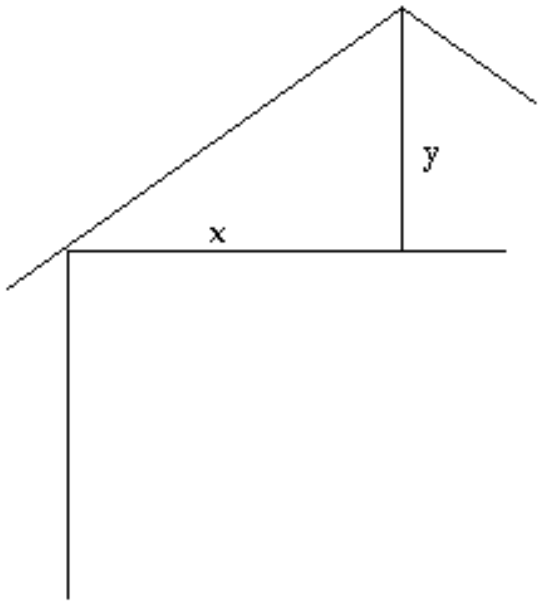
D)



Solve the problem.

43) A ladder is resting against a wall. The foot of the ladder is 5 feet from the wall, and the top of the ladder is 16 feet from the ground. Find the slope of the ladder. 43) _____

A) 16 B) 5 C) $\frac{5}{16}$ D) $\frac{16}{5}$

44) 

44) _____

Let x = 28 and y = 7. Find the pitch of the roof.

A) $\frac{1}{3}$ B) $\frac{1}{2}$ C) $\frac{1}{4}$ D) $\frac{1}{6}$

45) A hill on a hiking trail goes up 69 feet over a distance of 138 feet. Find the grade of the hill. 45) _____

A) 2 B) 138 C) $\frac{1}{2}$ D) 69

46) Kannanaski Rapids drops 62 ft over a horizontal distance of 837 ft. Find the slope of Kannanaski Rapids. Round your answer as appropriate. 46) _____

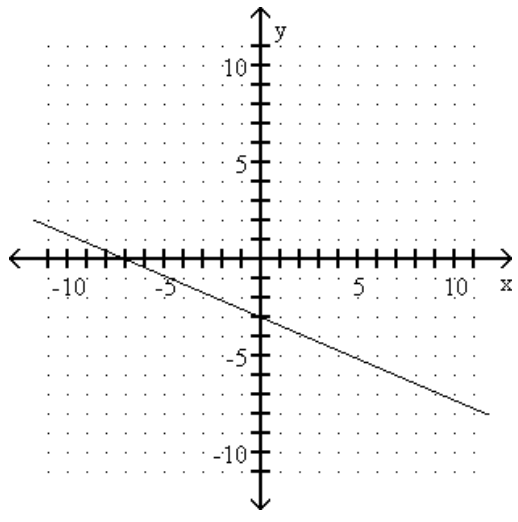
A) -13.5 B) -62 C) -0.074 D) -0.001

47) A children's slide rises 10 feet over a horizontal distance of 9 feet. Find the slope of the slide. 47) _____

A) 9 B) $\frac{10}{9}$ C) $\frac{9}{10}$ D) 10

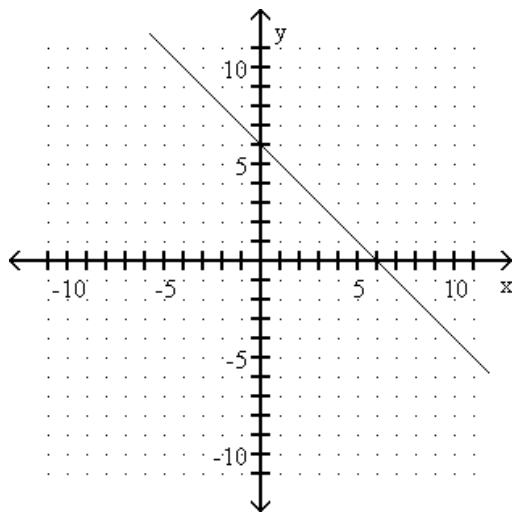
Write the equation of the line in slope-intercept form.

48) 48) _____



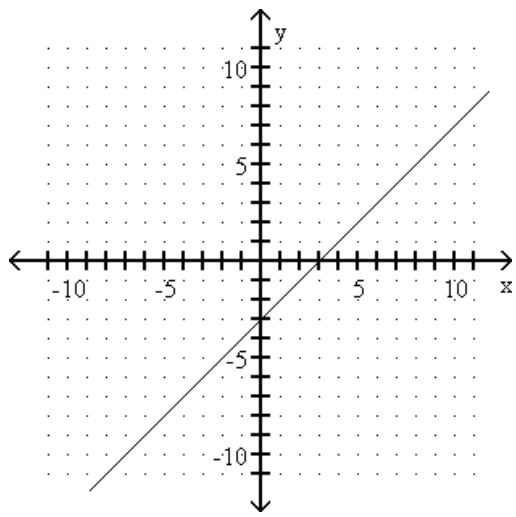
A) y = -7x - 7 B) y = $-\frac{3}{7}$x - 3 C) y = $-\frac{7}{3}$x - 7 D) y = -x - 3

49) 49) _____



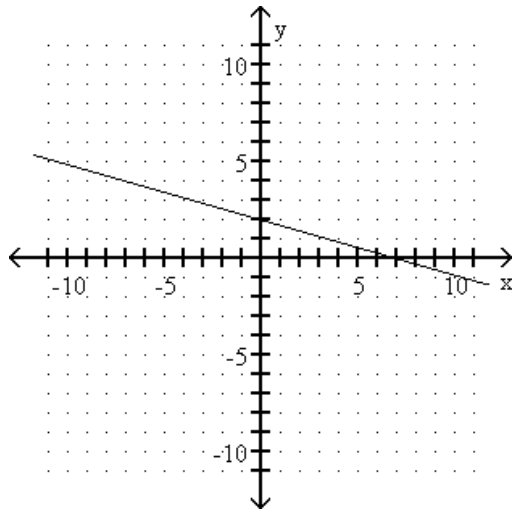
A) y = x + 6 B) y = - x - 6 C) y = - x + 6 D) y = x - 6

50) 50) _____

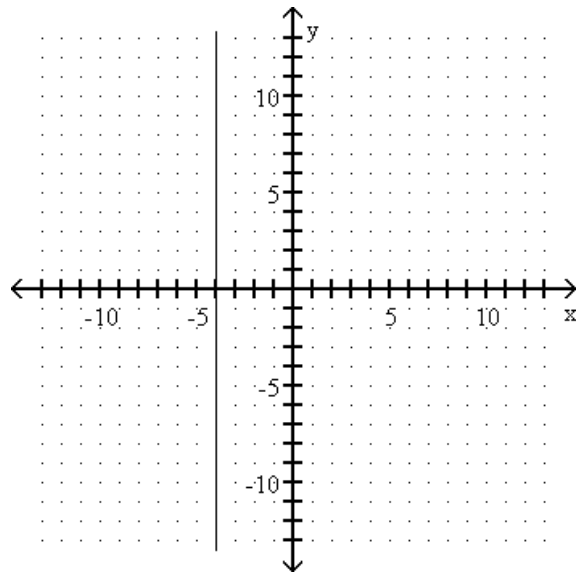


A) y = x + 3 B) y = x - 3 C) y = - x - 3 D) y = - x + 3

51) 51) _____

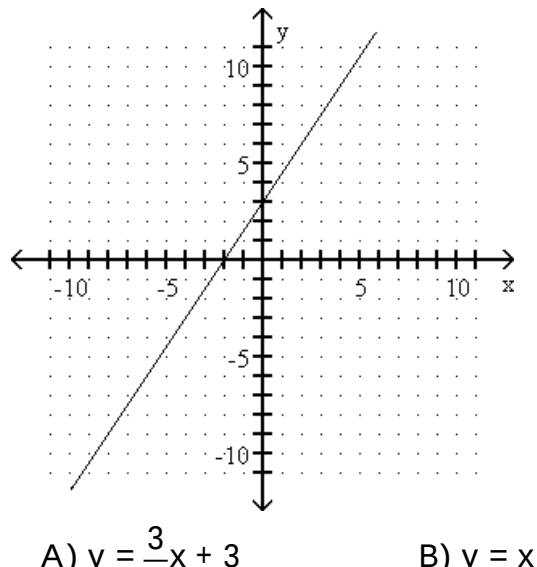


A) y = 7x + 7 B) y = x + 2 C) y = $-\frac{2}{7}x + 2$ D) y = $-\frac{7}{2}x + 7$

52) 

52) _____

A) y = -4 B) x = -4 C) y = 4 D) x = 4

53) 

53) _____

A) $y = \frac{3}{2}x + 3$ B) y = x + 3 C) y = -2x - 2 D) $y = \frac{2}{3}x - 2$

Write the equation of the line in slope-intercept form given the slope and the coordinates of the y-intercept.

54) m = -2; (0, -8) 54) _____

A) y = -2x + 8 B) y = -2x - 8 C) y = -8x - 2 D) y = 2x - 8

55) $m = -\frac{2}{7}$; (0, -7) 55) _____

A) $y = 7x - \frac{2}{7}$ B) $y = -\frac{2}{7}x$ C) $y = -7x - \frac{2}{7}$ D) $y = -\frac{2}{7}x - 7$

56) m = -4; (0, 7) 56) _____

A) y = 4x - 7 B) y = -4x - 7 C) y = -4x + 7 D) y = 4x + 7

57) $m = \frac{5}{6}; \left(0, -\frac{5}{7}\right)$ 57) _____

A) $y = -\frac{5}{6}x + \frac{5}{7}$ B) $y = \frac{5}{6}x$ C) $y = \frac{5}{6}x - \frac{5}{7}$ D) $y = -\frac{5}{6}x - \frac{5}{7}$

58) m = 2; (0, -4) 58) _____

A) y = -4x + 2 B) y = -2x + 4 C) y = 4x - 2 D) y = 2x - 4

59) m = $-\frac{3}{5}$; $\left(0, \frac{5}{7}\right)$ 59) _____

A) y = $\frac{3}{5}x - \frac{5}{7}$ B) y = $-\frac{3}{5}x$ C) y = $\frac{3}{5}x + \frac{5}{7}$ D) y = $-\frac{3}{5}x + \frac{5}{7}$

60) m = $-\frac{1}{6}$; (0, 2) 60) _____

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

61) m = 0.86; (0, 4.8) 61) _____

A) y = 0.86x - 4.8 B) y = 0.86x + 4.8 C) y = -0.86x + 4.8 D) y = 4.8x

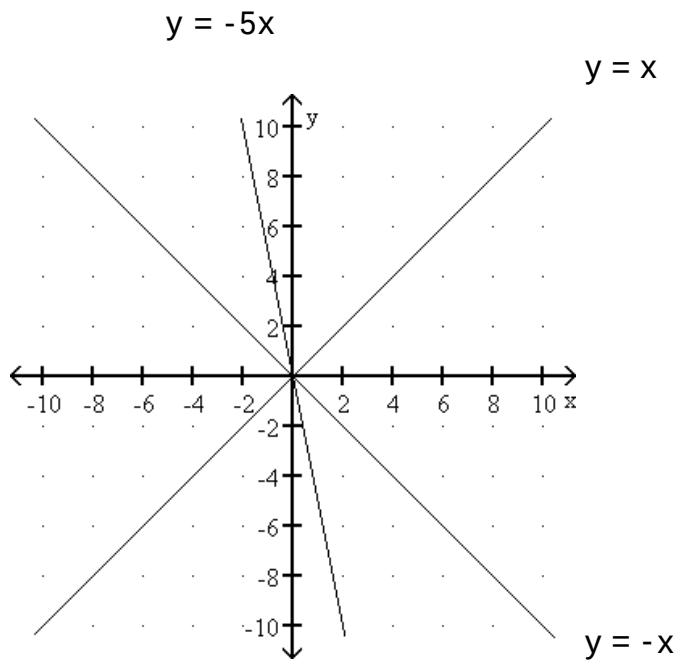
62) m = -0.7; (0, -4.8) 62) _____

A) y = -0.7x - 4.8 B) y = -0.7x + 4.8 C) y = 0.7x - 4.8 D) y = -4.8x

63) m = -2; (0, 0) 63) _____

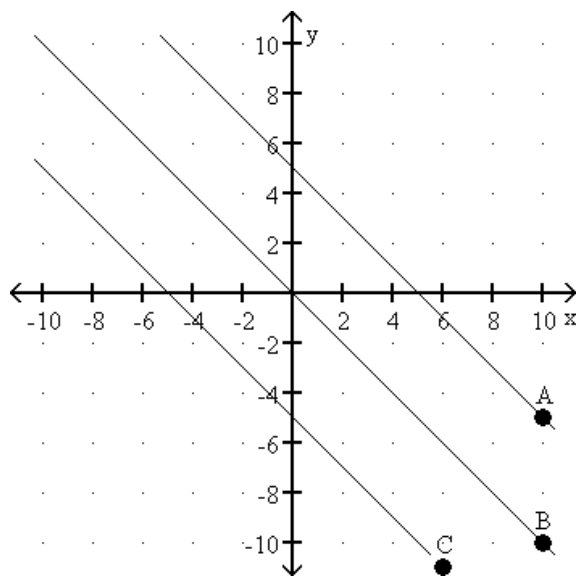
A) y = 0 B) y = -2x C) y = 2x D) y = -2x + 1

1) A
2) C
3) B
4) Answers may vary. One possibility:



For y = x, the slope is 1; for y = -x, the slope is -1; for y = -5x, the slope is -5. The first two lines are equally steep. The third line is steeper, since the absolute value of its slope is greater than the absolute value of the slope of either of the other lines. Since the first line has a positive slope, it goes uphill from left to right. Since the other two lines have a negative slope, they go downhill from left to right. The y-intercept of all three lines is the origin, (0, 0).

5) A
6) C
7) Answers may vary. One possibility:



Line A: y = -x + 5
Line B: y = -x
Line C: y = -x - 5

For all three lines, the slope is -1. Thus, they are parallel and do not intersect. In addition, they all slope downhill from left to right. The y-intercept of y = -x is (0, 0), the y-intercept of y = -x + 5 is (0, 5), and the y-intercept of y = -x - 5 is (0, - 5). The graph of y = -x + 5 looks like the graph of y = -x shifted up 5 units. The graph of y = -x - 5 looks like the graph of y = -x shifted down 5 units.

8) A
9) B
10) C
11) C
12) B
13) D
14) D
15) D
16) A
17) A
18) B
19) A
20) D
21) B
22) B
23) D
24) D
25) A
26) D
27) C
28) A
29) B
30) A
31) B
32) C
33) C
34) D
35) B
36) D
37) D
38) B
39) D
40) D
41) B
42) B
43) D
44) C
45) C
46) C
47) B
48) B
49) C
50) B
51) C
52) B
53) A
54) B
55) D

56) C
57) C
58) D
59) D
60) D
61) B
62) A
63) B