

MAT0022 - Chapter 13
Math Connections
Valencia College

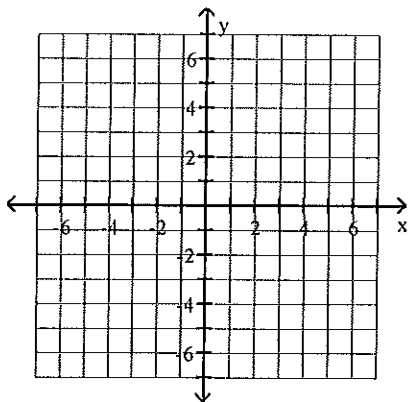
SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.

13.1

Plot the ordered pair.

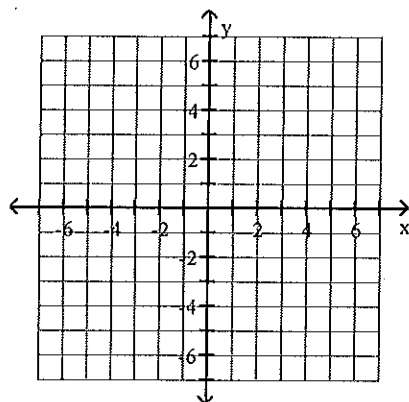
1) (2, 5)

1) _____



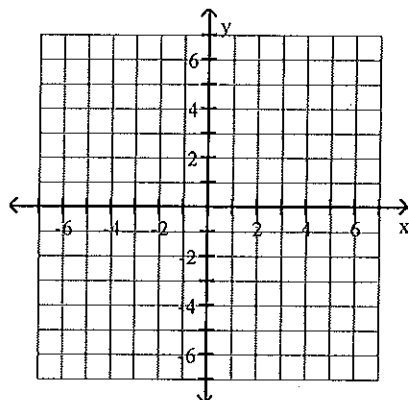
2) (-6, 1)

2) _____

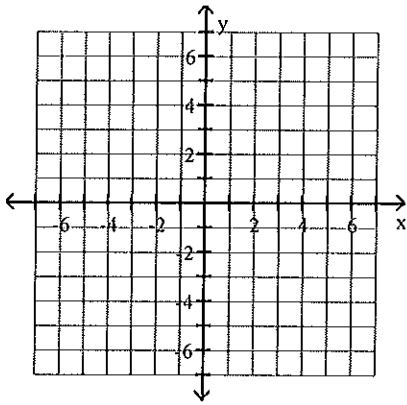


3) (5, -3)

3) _____

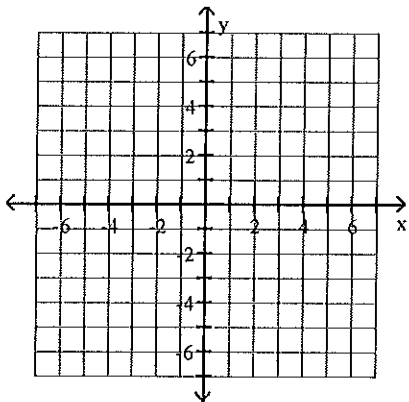


4) (0, 2)



4) _____

5) (-6, 0)



5) _____

Name the quadrant or axis in which the point lies.

6) (2, 19)

6) _____

7) (-15, 8)

7) _____

8) (-7, -2)

8) _____

9) (12, -9)

9) _____

10) (6, 0)

10) _____

11) (0, 5)

11) _____

Complete the ordered pairs so that they are solutions of the given linear equation.

12) $y = -x + 7$; (5,), (7,), (0,)

12) _____

13) $7x + y = -12$ (-2,), (0,), (1,)

13) _____

14) $4x + y = -22$ (-6,), (0,), (1,)

14) _____

15) $y = -2x + 3$; $(-3, \quad), (3, \quad), (0, \quad)$

15) _____

16) $x + y = 7$ $(2, \quad), (7, \quad), (0, \quad)$

16) _____

17) $y = \frac{1}{2}x - 1$; $(6, \quad), (\quad, -1)$

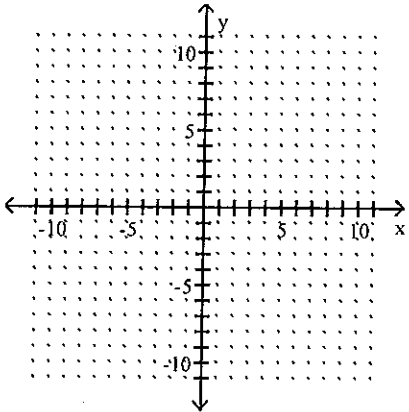
17) _____

13.2

Complete the ordered pairs for the given linear equation. Then plot the points and graph the equation by connecting the points.

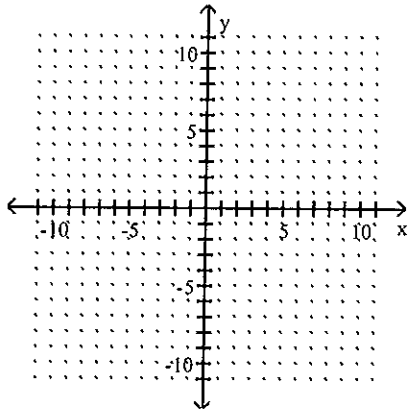
18) $y = 3x + 6$
 $(0, \quad), (1, \quad), (-1, \quad)$

18) _____



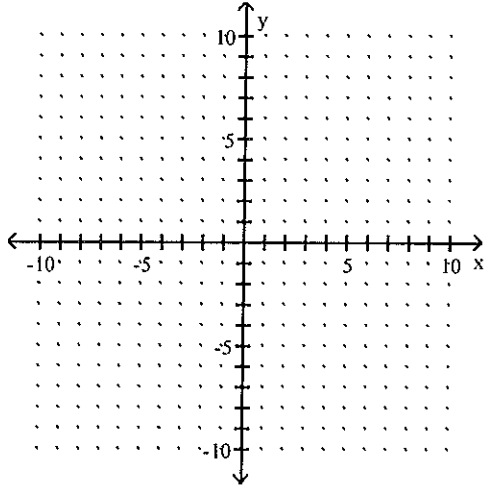
19) $y = -2x + 4$
 $(0, \quad), (1, \quad), (-1, \quad)$

19) _____



20) $7x + 5y = 0$

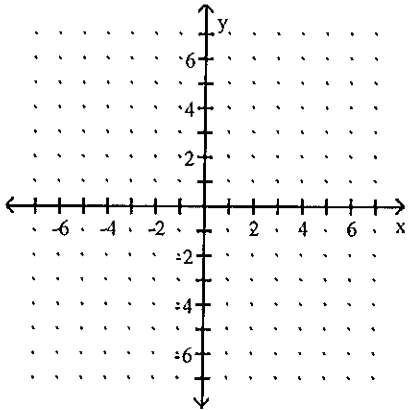
$(-5, \quad), (0, \quad), (5, \quad)$



20) _____

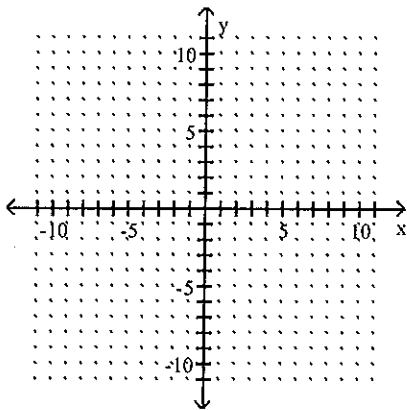
Graph the linear equation.

21) $x + y = -6$



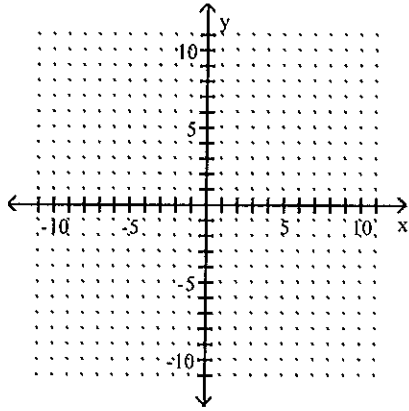
21) _____

22) $y = -5x + 3$



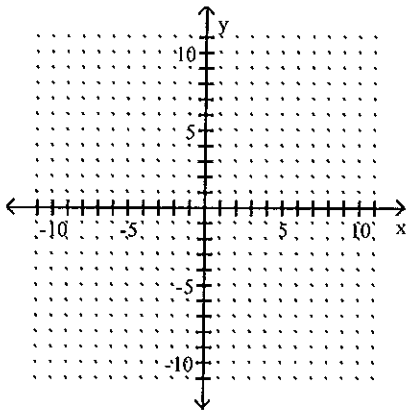
22) _____

23) $y = 1$



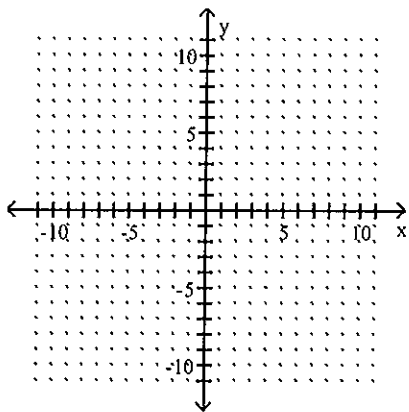
23) _____

24) $x = -6$



24) _____

25) $y = 5x$

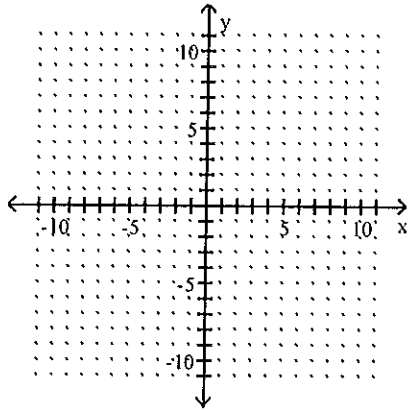


25) _____

13.3

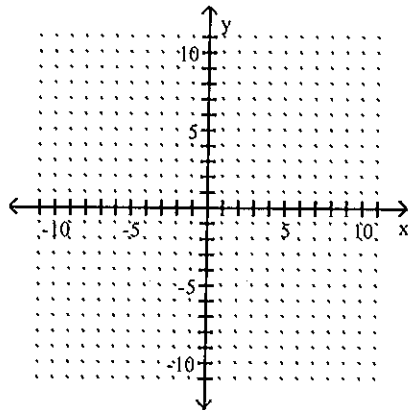
Graph the linear equation by finding and plotting its intercepts.

26) $x + y = -4$



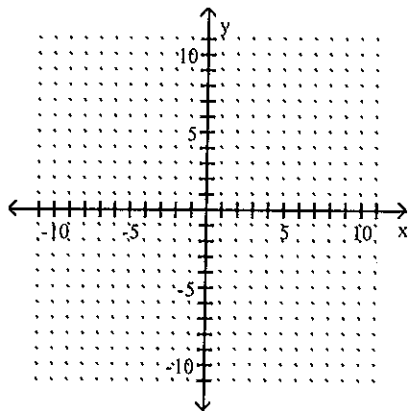
26) _____

27) $y = -3x$



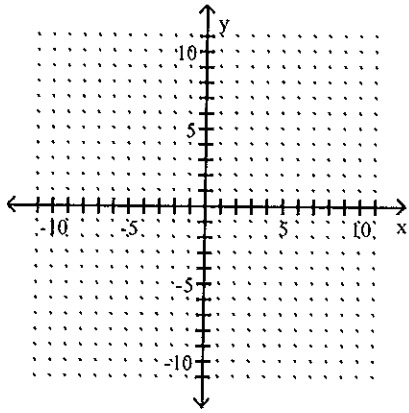
27) _____

28) $-4x - 8y = 8$



28) _____

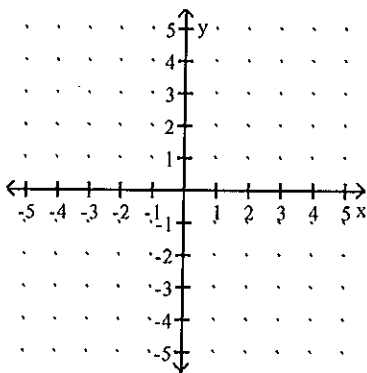
29) $2x - 8y = 0$



29) _____

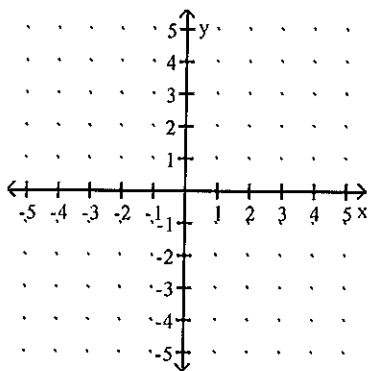
Graph the linear equation.

30) $x = -4$



30) _____

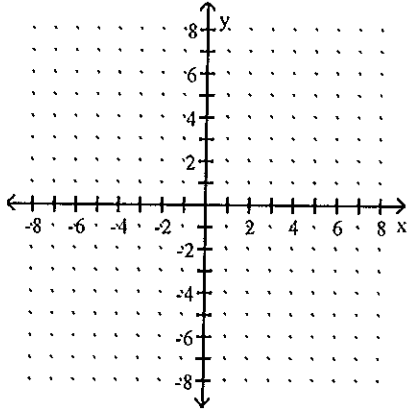
31) $y = -2$



31) _____

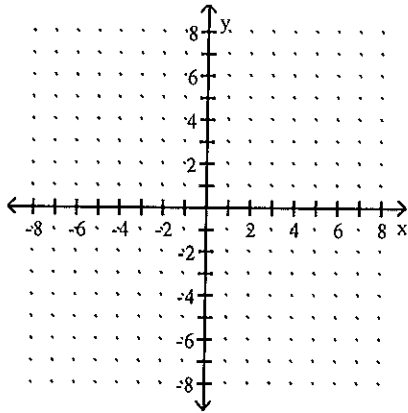
32) $y = -5\frac{1}{2}$

32) _____



33) $x = 6\frac{1}{2}$

33) _____

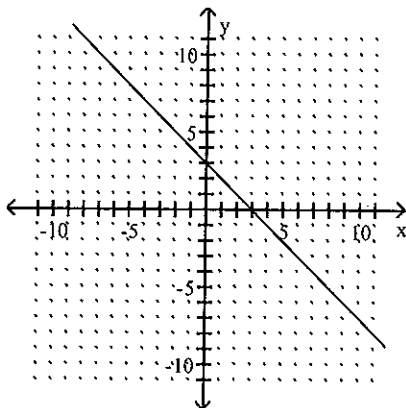


13.4

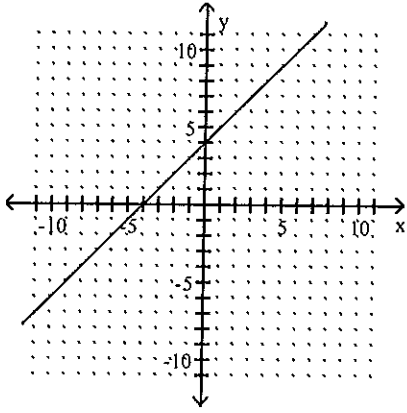
State whether the slope of the line is positive, negative, 0, or is undefined.

34)

34) _____

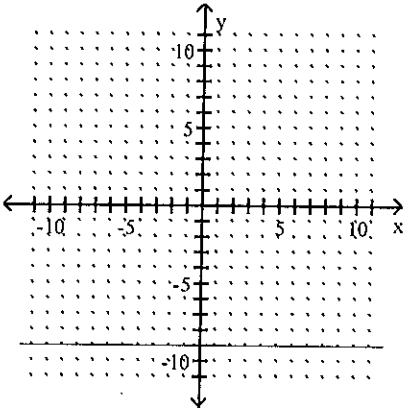


35)



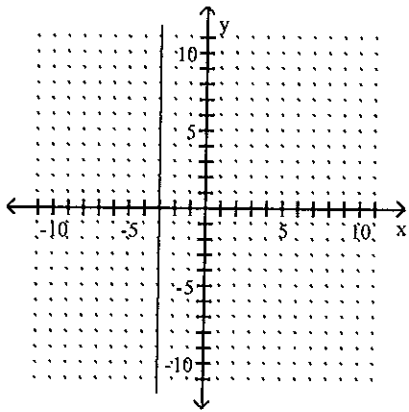
35) _____

36)



36) _____

37)



37) _____

Decide whether a line with the given slope is upward sloping, downward sloping, horizontal or vertical.

38) $m = 0$

38) _____

39) $m = -5$

39) _____

40) $m = \frac{7}{2}$

40) _____

41) m is undefined

41) _____

Find the slope of the line that passes through the points.

42) (5, 2) and (8, 8)

42) _____

43) (6, 7) and (9, 1)

43) _____

44) (11, 3) and (-16, 2)

44) _____

45) (7, 0), (0, 9)

45) _____

46) (-8, -5) and (-8, -7)

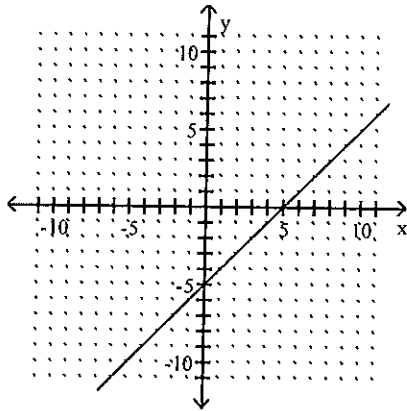
46) _____

47) (4, 1) and (-8, 1)

47) _____

Use two points on the graph to find the slope of the line.

48)



48) _____

Find the slope of the line.

49) $y = -5$

49) _____

50) $x + y = -8$

50) _____

51) $10x - 4y = 40$

51) _____

52) $-x + 3y = 30$

52) _____

53) $y = -9x + 12$

53) _____

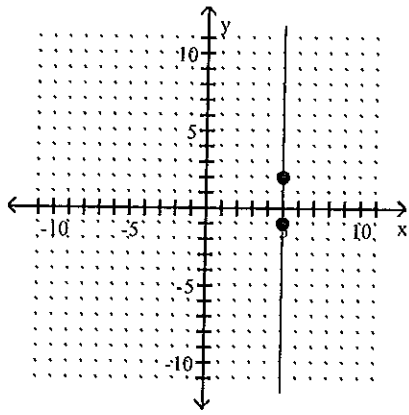
54) $y = \frac{3}{5}x + \frac{1}{2}$

54) _____

55) $x = 8$

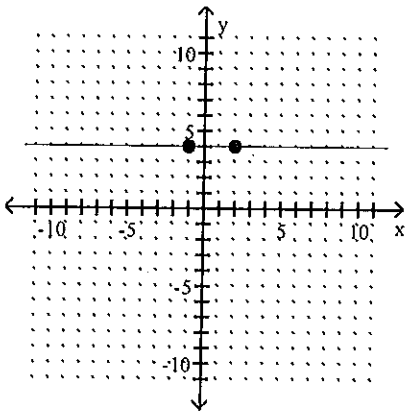
55) _____

56)



56) _____

57)



57) _____

58) $x = 2$

58) _____

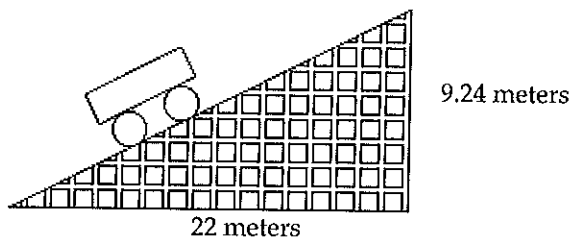
59) $y = -2$

59) _____

Solve.

60) A section of roller coaster track has the dimensions shown in the diagram. Find the grade of the track, which is the slope written as a percent.

60) _____



61) The approach ramp used by a daredevil motorcyclist for flying over a collection of flaming barrels of oil has a rise of 15 feet for every 30 feet in horizontal distance. Find the grade of the ramp. Round to the nearest whole percent.

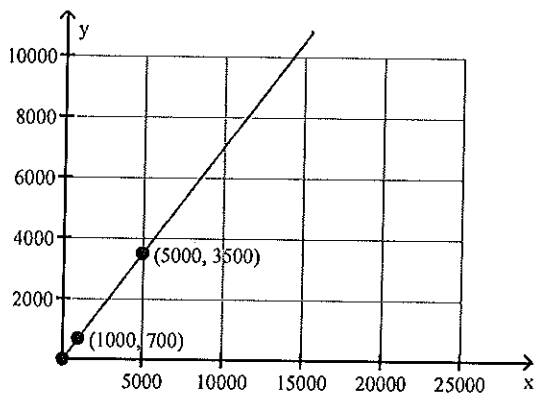
61) _____

62) An inclined walkway leading to a new building is to rise 1 inches for each horizontal distance of 23 feet. Write this slope as a grade. (Round to the nearest tenth of a percent if necessary.)

62) _____

Find the slope of the line and write the slope as a rate of change. Don't forget to attach the proper units.

- 63) The graph shows the total cost y (in dollars) of owning and operating a mini-van where x is the number of miles driven. 63) _____



Find an equation of the line through the pair of points. Write the equation in the form $Ax + By = C$.

- 64) $(5, -4)$ and $(-4, -6)$ 64) _____

Find an equation of the line described. Write the equation in slope-intercept form if possible.

- 65) Through $(5, 24)$ and $(10, 39)$ 65) _____

- 66) Through $(-1, -18)$ and $(4, 22)$ 66) _____

- 67) Through $(4, -10)$ and $(6, -20)$ 67) _____

- 68) Through $(0, 0)$ and $\left(4, \frac{4}{7}\right)$ 68) _____

Solve. Assume the exercise describes a linear relationship.

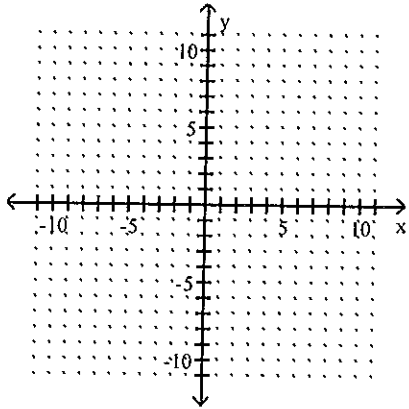
- 69) The average value of a certain type of automobile was \$21,600 in 2007 and depreciated to \$10,440 in 2012. Let y be the average value of the automobile in the year x , where $x = 0$ represents 2007. Write a linear equation that models the value of the automobile in terms of the year x . 69) _____

- 70) An investment is worth \$2347 in 2006. By 2011 it has grown to \$5012. Let y be the value of the investment in the year x , where $x = 0$ represents 2006. Write a linear equation that models the value of the investment in the year x . 70) _____

- 71) A faucet is used to add water to a large bottle that already contained some water. After it has been filling for 4 seconds, the gauge on the bottle indicates that it contains 23 ounces of water. After it has been filling for 11 seconds, the gauge indicates the bottle contains 58 ounces of water. Let y be the amount of water in the bottle x seconds after the faucet was turned on. Write a linear equation that models the amount of water in the bottle in terms of x . 71) _____

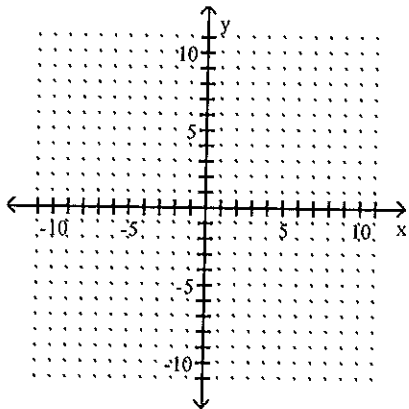
Use the slope-intercept form to graph the equation.

72) $y = -2x - 3$



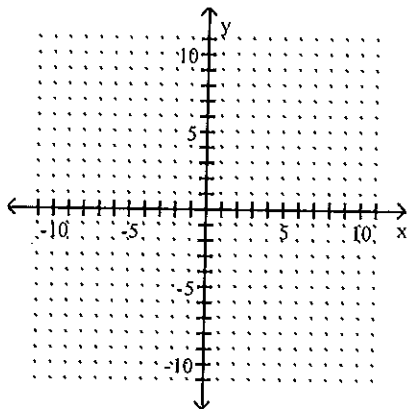
72) _____

73) $y = \frac{1}{2}x + 3$



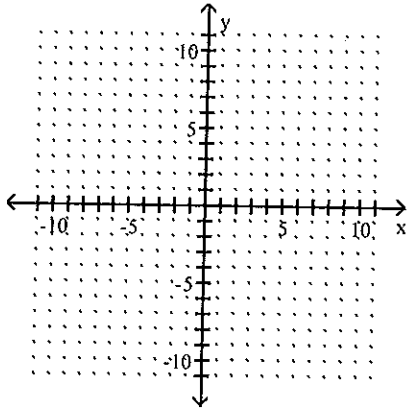
73) _____

74) $y = -\frac{1}{2}x + 2$



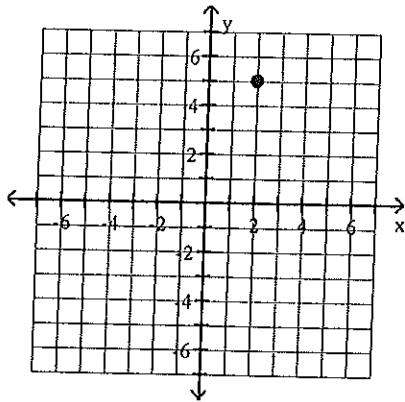
74) _____

75) $y = -2x$

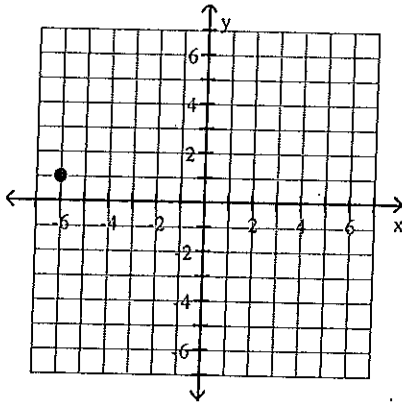


75) _____

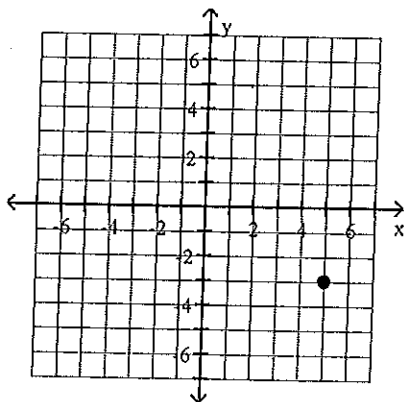
1)



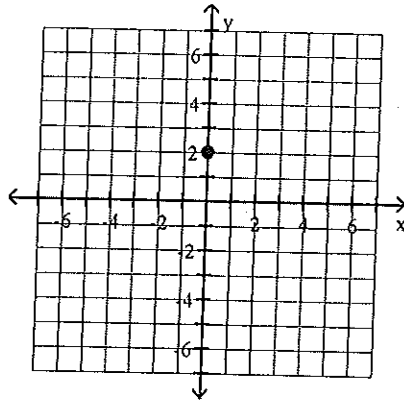
2)



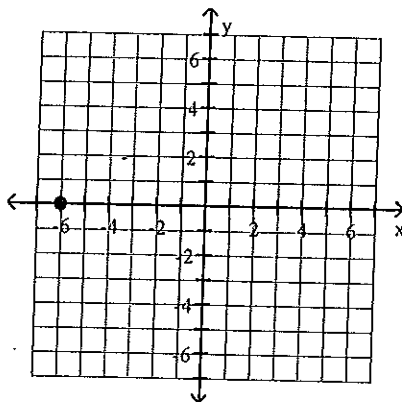
3)



4)

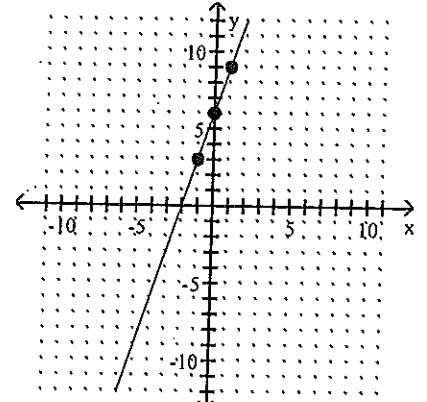


5)

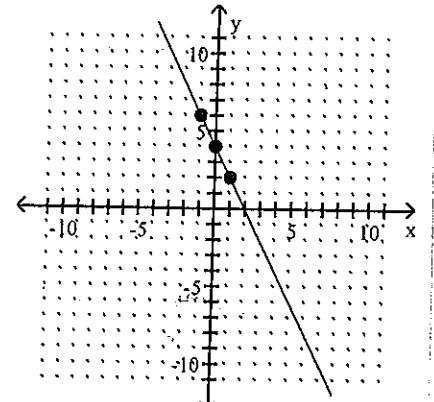


- 6) quadrant I
- 7) quadrant II
- 8) quadrant III
- 9) quadrant IV
- 10) x-axis
- 11) y-axis
- 12) (5, 2) (7, 0) (0, 7)
- 13) (-2, 2), (0, -12), (1, -19)
- 14) (-6, 2), (0, -22), (1, -26)
- 15) (-3, 9) (3, -3) (0, 3)
- 16) (2, 5), (7, 0), (0, 7)
- 17) (6, 2), (0, -1)

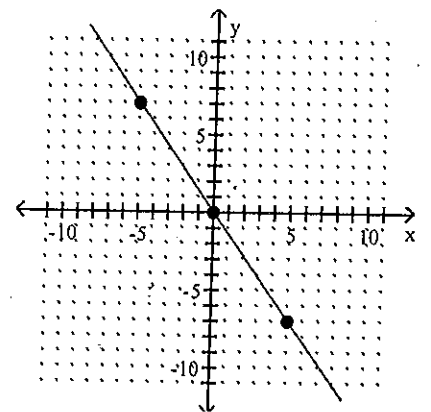
18) (0, 6), (1, 9), (-1, 3)



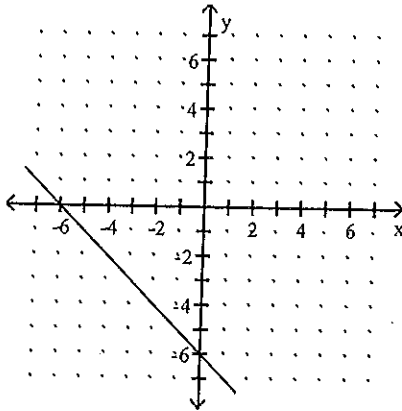
19) (0, 4), (1, 2), (-1, 6)



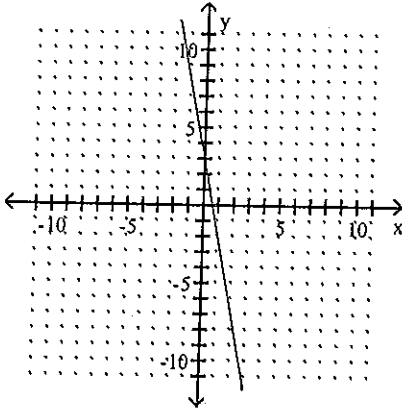
20) (-5, 7), (0, 0), (5, -7)



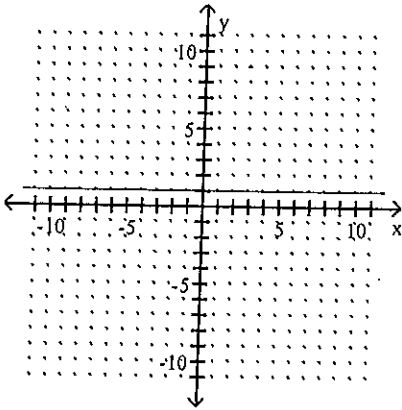
21)



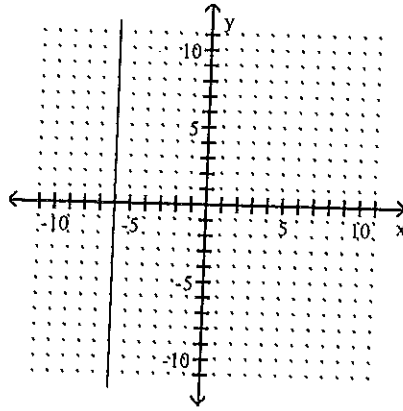
22)



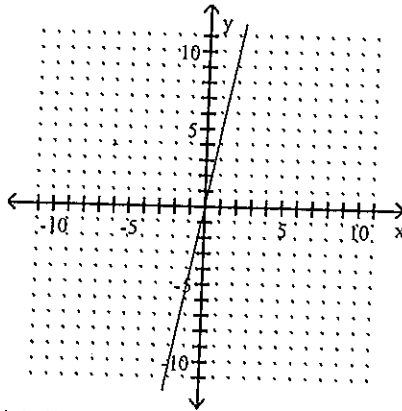
23)



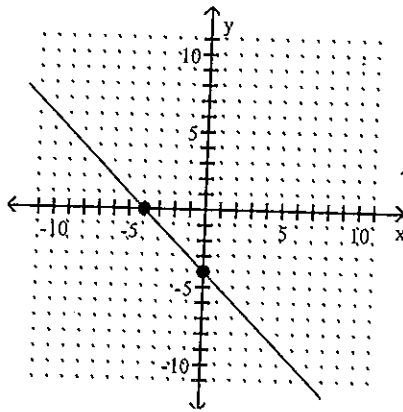
24)



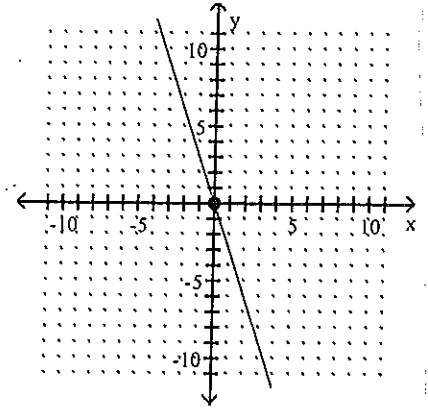
25)



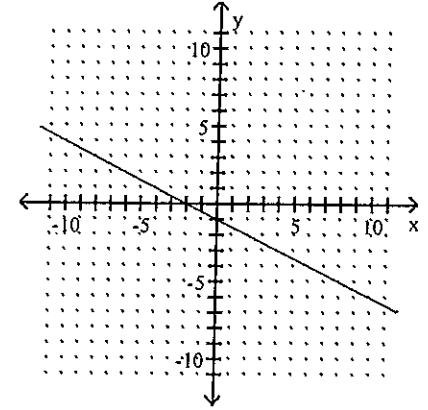
26) (-4, 0), (0, -4)



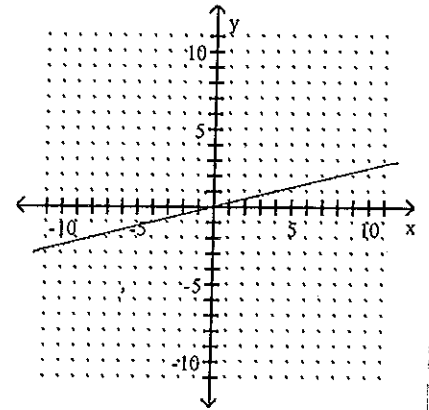
27) (0, 0)



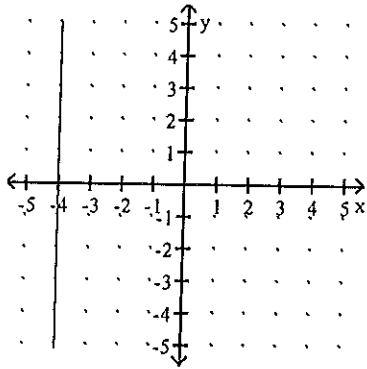
28) (0, -1), (-2, 0)



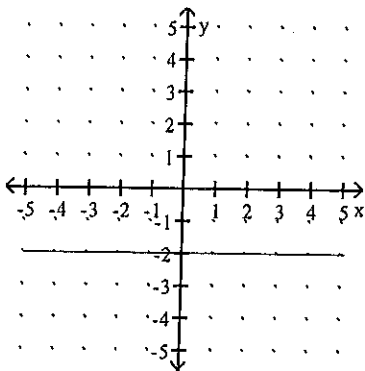
29) (0, 0)



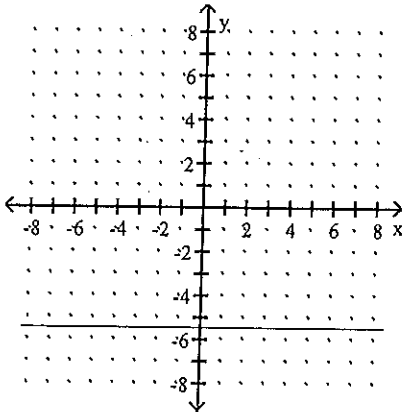
30)



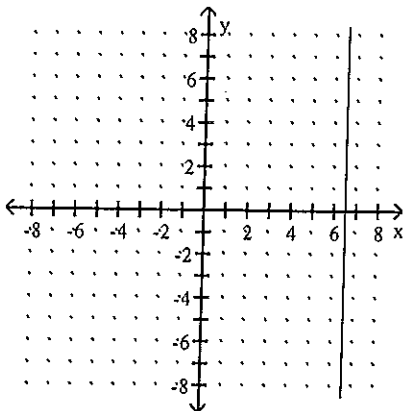
31)



32)



33)



34) negative

35) positive

36) 0

37) undefined

38) horizontal

39) downward

40) upward

41) vertical

42) 2

43) -2

44) $\frac{1}{27}$

45) $-\frac{9}{7}$

46) undefined slope

47) 0

48) 1

49) $m = 0$

50) $m = -1$

51) $m = \frac{5}{2}$

52) $m = \frac{1}{3}$

53) $m = -9$

54) $m = \frac{3}{5}$

55) undefined slope

56) undefined slope

57) $m = 0$

58) undefined slope

59) $m = 0$

60) 42%

61) 50%

62) 0.4%

63) \$0.70 per mile

64) $-2x + 9y = -46$

65) $y = 3x + 9$

66) $y = 8x - 10$

67) $y = -5x + 10$

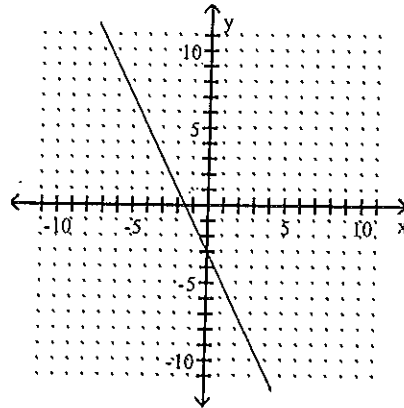
68) $y = \frac{1}{7}x$

69) $y = -2232x + 21,600$

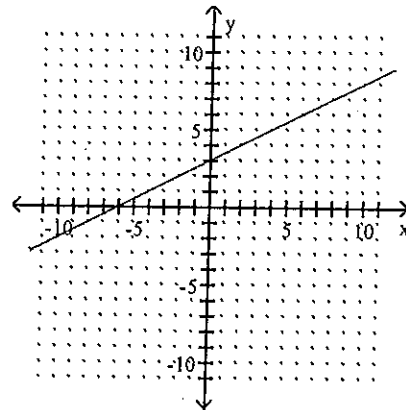
70) $y = 533x + 2347$

71) $y = 5x + 3$

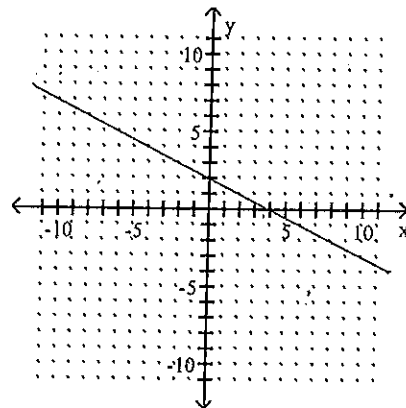
72)



73)



74)



75)

