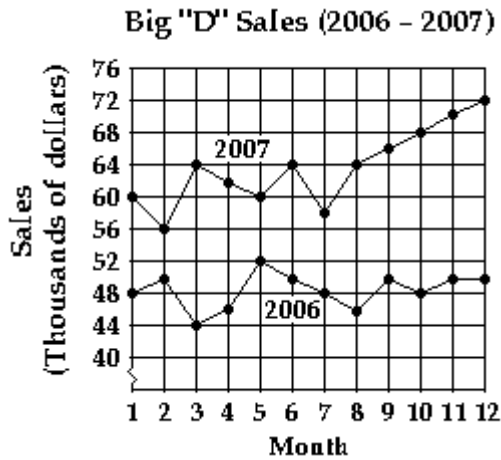


Use Scantron 882E to transfer the answers.

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

The graph shows sales in thousands of dollars for 1989 and 1990. Use it to answer the question.



- 1) If the ordered pair (x, y) represents a point on the graph, what does x represent? What does y represent? 1) _____
 - A) x represents the year 2006; y represents the year 2007.
 - B) y represents the month; x represents the sales in thousands of dollars.
 - C) x represents the month; y represents the sales in thousands of dollars.
 - D) x represents the year 2006; y represents the sales in thousands of dollars

- 2) Estimate the sales in June 2006. 2) _____
 - A) about \$52 thousand
 - B) about \$50 thousand
 - C) about \$48 thousand
 - D) about \$64 thousand

- 3) Write an ordered pair (x, y) that gives approximately the sales in June 2006. 3) _____
 - A) (6, 50)
 - B) (50, 6)
 - C) (2006, 50)
 - D) (June, 50)

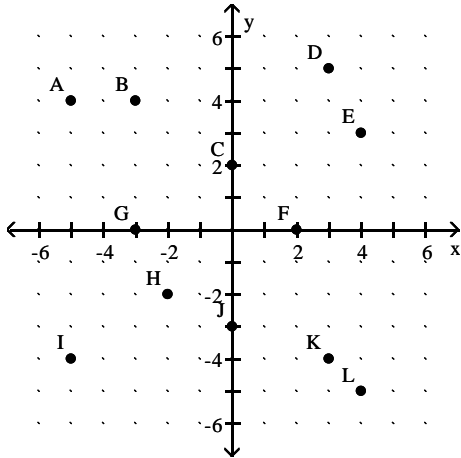
- 4) Which month in 2006 had the lowest sales? 4) _____
 - A) Month 6
 - B) Month 2
 - C) Month 8
 - D) Month 3

- 5) Which month in 2007 had the highest sales? 5) _____
 - A) Month 5
 - B) Month 12
 - C) Month 3
 - D) Month 6

- 6) What month in 2006 had the highest sales? 6) _____
 - A) Month 12
 - B) Month 5
 - C) Month 2
 - D) Month 3

- 7) What month in 2007 had the lowest sales? 7) _____
 - A) Month 12
 - B) Month 5
 - C) Month 2
 - D) Month 3

Plot the point on the rectangular coordinate system provided. Write the corresponding letter as your answer.



8) (0, 2)

A) F

B) K

C) C

D) B

8) _____

9) (-5, -4)

A) I

B) G

C) A

D) L

9) _____

10) (-3, 4)

A) A

B) F

C) B

D) K

10) _____

11) (-3, 0)

A) J

B) F

C) C

D) G

11) _____

12) (3, 5)

A) D

B) L

C) I

D) K

12) _____

13) (4, 3)

A) C

B) E

C) D

D) K

13) _____

Complete the table for the equation.

14) $3x + y = 22$

14) _____

x	y
5	
22	
0	

A) 7; -44; 22

B) 22; 22; 22

C) 7; -44; -44

D) 22; -44; -44

15) $y + 4x = -3$

15) _____

x	y
-2	
	9
0	

A) 5; -3; 0

B) 5; -9; 9

C) -2; -3; -3

D) 5; -3; -3

16) $y = -7x - 33$

16) _____

x	y
-6	
0	-40

A) 9; -51; 1

B) 9; -33; 1

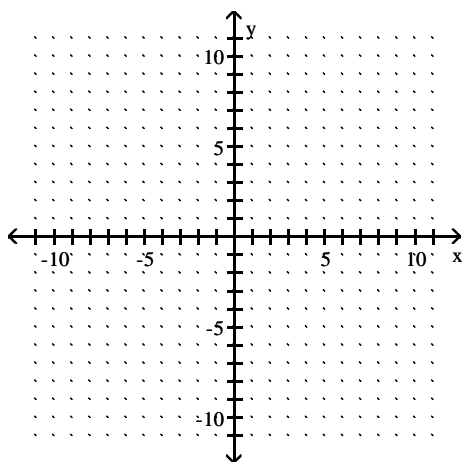
C) -6; -33; 1

D) 9; 0; 1

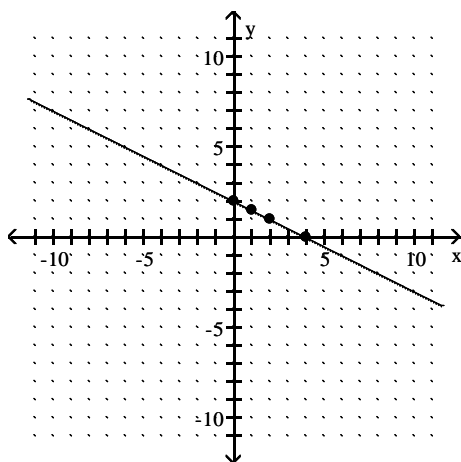
Graph the equation by determining the missing values needed to plot the ordered pairs.

17) $x + 2y = 4$; $(0, \quad)$, $(\quad, 0)$, $(1, \quad)$, $(\quad, 1)$

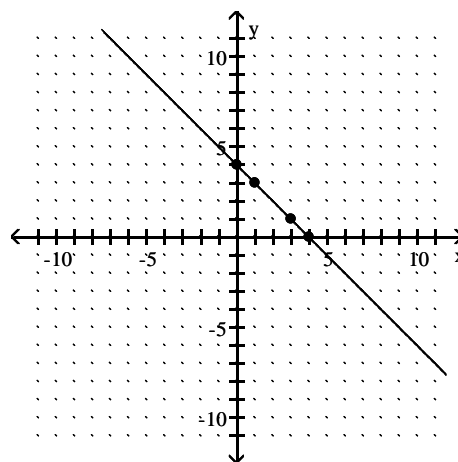
17) _____



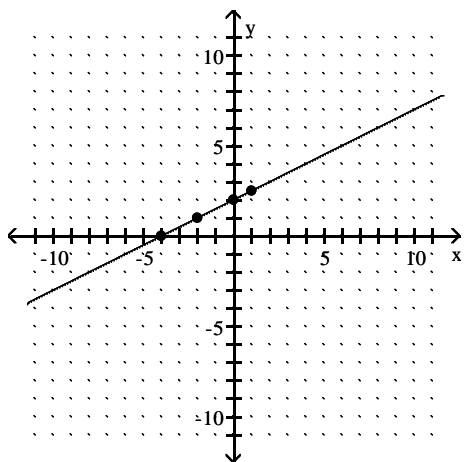
A)



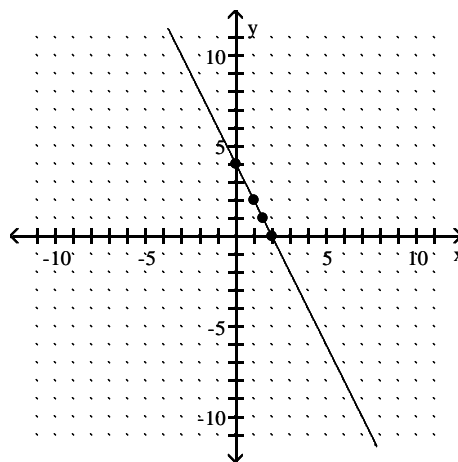
B)



C)



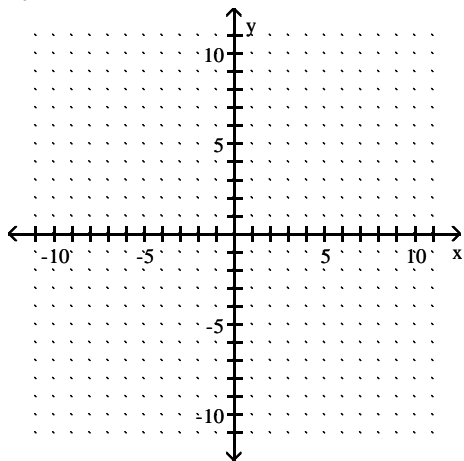
D)



Find the x- and y-intercepts. Then graph the equation.

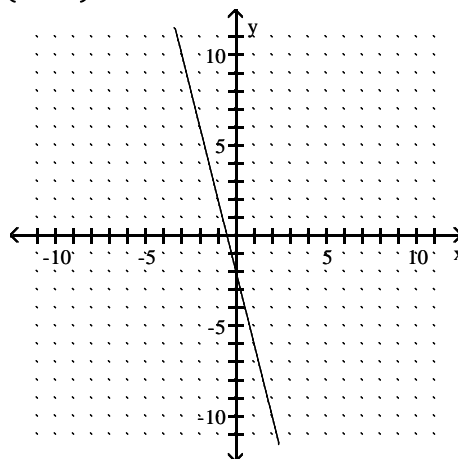
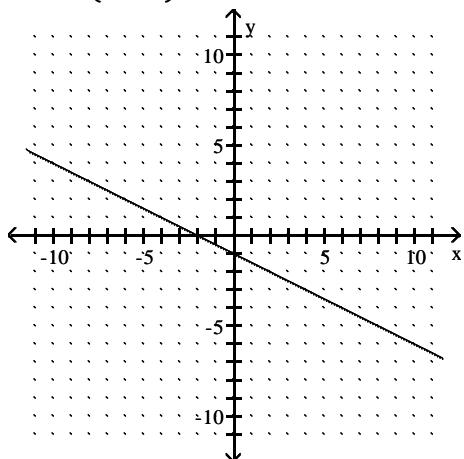
18) $8y - 2x = -4$

18) _____

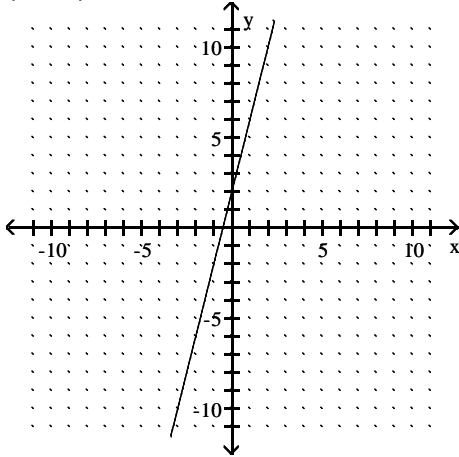


A) $(-2, 0); \left(0, -\frac{1}{2}\right)$

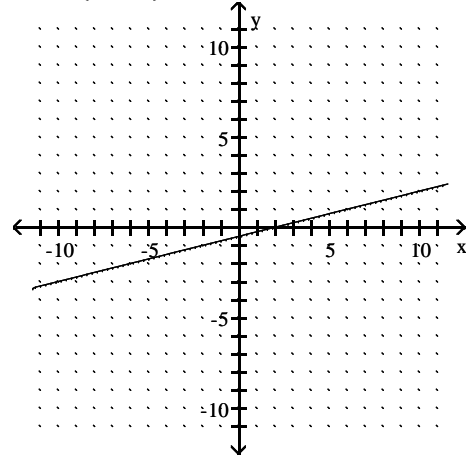
B) $\left(-\frac{1}{2}, 0\right); (0, -2)$



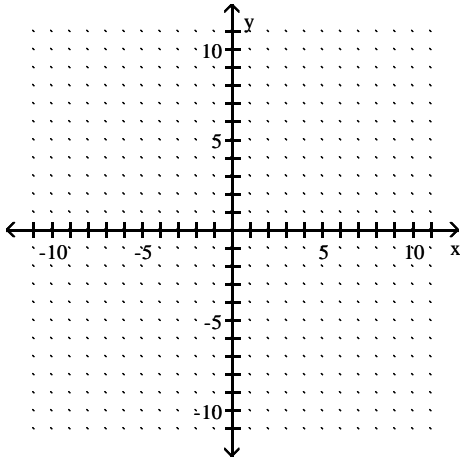
C) $\left(-\frac{1}{2}, 0\right); (0, 2)$



D) $(2, 0); \left(0, -\frac{1}{2}\right)$

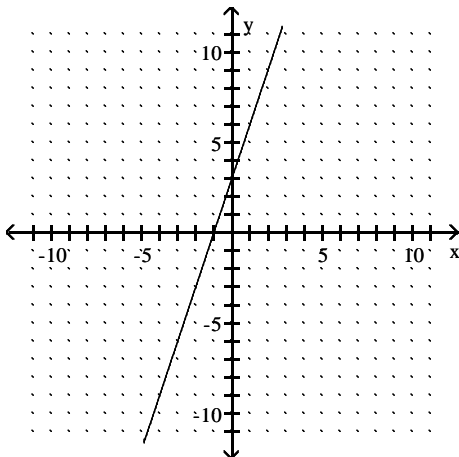


19) $3x - 9y = 9$

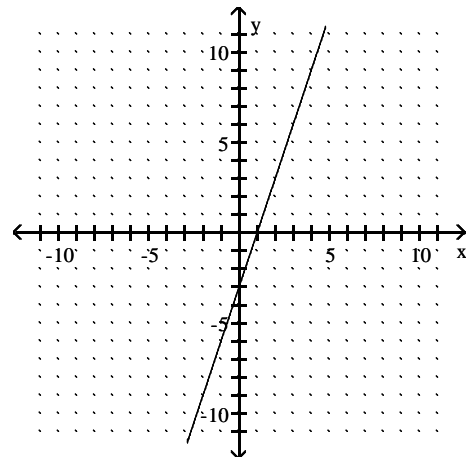


19) _____

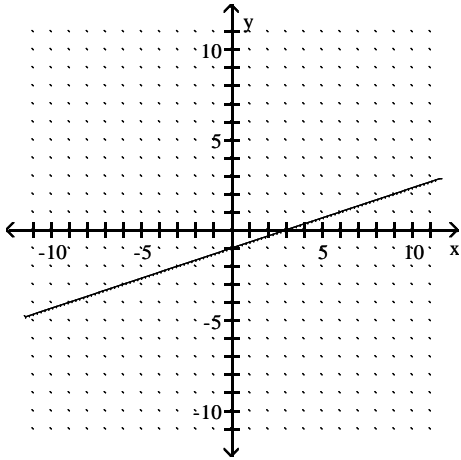
A) $(-1, 0); (0, 3)$



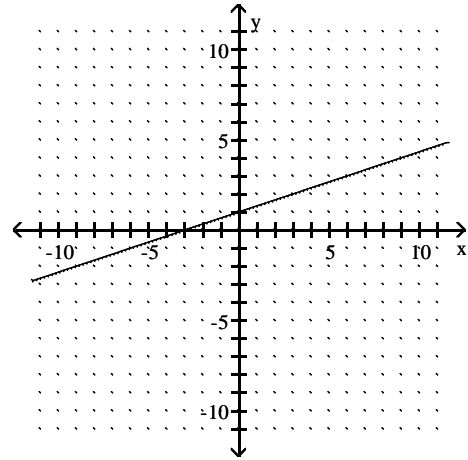
B) $(1, 0); (0, -3)$



C) $(3, 0); (0, -1)$

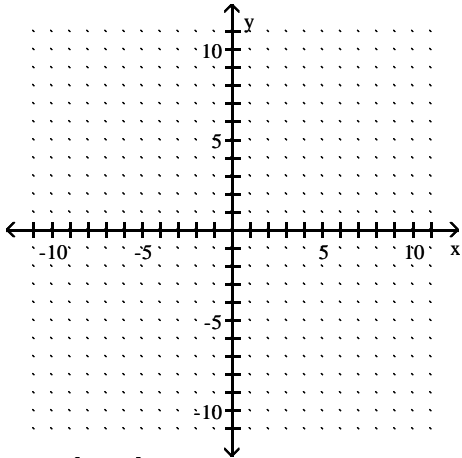


D) $(-3, 0); (0, 1)$



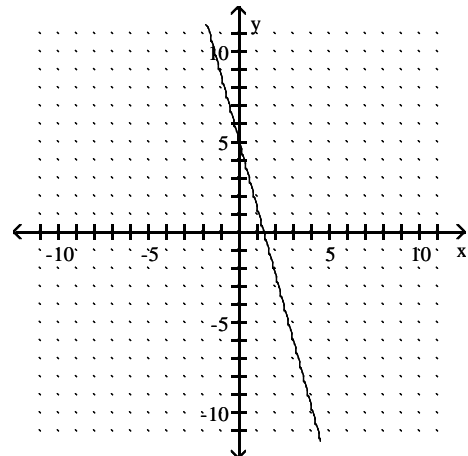
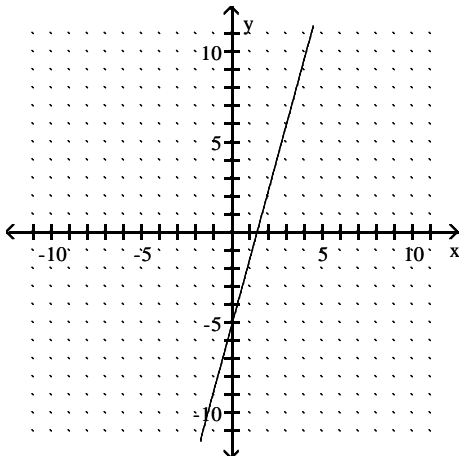
20) $\frac{11}{5}x + \frac{3}{5}y = 3$

20) _____

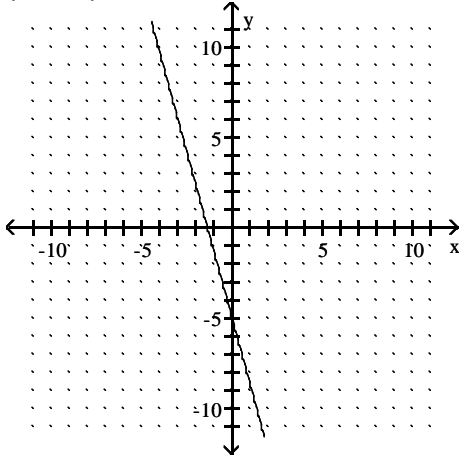


A) $\left(\frac{15}{11}, 0\right); (0, -5)$

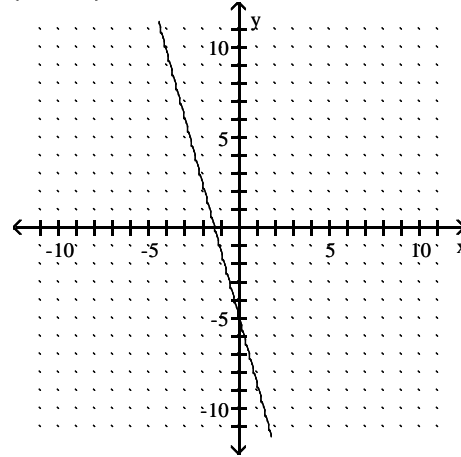
B) $\left(\frac{15}{11}, 0\right); (0, 5)$



C) $\left(-\frac{15}{11}, 0\right); (0, -5)$



D) $\left(-\frac{15}{11}, 0\right); (0, 5)$



Find the midpoint of the segment with the given endpoints.

21) (5, 3) and (2, 7)

A) $\left(\frac{3}{2}, -2\right)$

B) $\left(\frac{7}{2}, 5\right)$

C) (3, -4)

D) (7, 10)

21) _____

22) (7, -8) and (-8, 6)

A) (-1, -2)

B) $\left(-\frac{1}{2}, -1\right)$

C) (15, -14)

D) $\left(\frac{15}{2}, -7\right)$

22) _____

23) (-6, 9) and (7, 4)

A) (-13, 5)

B) (1, 13)

C) $\left(-\frac{13}{2}, \frac{5}{2}\right)$

D) $\left(\frac{1}{2}, \frac{13}{2}\right)$

23) _____

Suppose that segment PQ has the given coordinates for one endpoint P and for its midpoint M. Find the coordinates of the other endpoint Q.

24) P(4, 6) and M $\left(\frac{7}{2}, 3\right)$

A) Q(1, 6)

B) Q(7, 6)

C) Q(3, 0)

D) Q $\left(\frac{1}{2}, 3\right)$

24) _____

25) P(0, -4) and M $\left(-\frac{1}{2}, \frac{1}{2}\right)$

A) Q(-1, 1)

B) Q(1, -9)

C) Q(-1, 5)

D) Q $\left(\frac{1}{2}, -\frac{9}{2}\right)$

25) _____

Find the slope of the line through the given pair of points, if possible. Based on the slope, indicate whether the line through the points rises from left to right, falls from left to right, is horizontal, or is vertical.

26) (-9, -8) and (4, 9)

A) $\frac{17}{13}$; rises

B) $-\frac{17}{13}$; falls

C) $\frac{13}{17}$; rises

D) $-\frac{13}{17}$; falls

26) _____

27) $(-8, -5)$ and $(6, -7)$

A) 7; rises

B) $-\frac{1}{7}$; falls

C) $\frac{1}{7}$; rises

D) -7; falls

27) _____

28) $(6, -9)$ and $(6, 9)$

A) 18; rises

C) -18; falls

B) Undefined; vertical

D) 0; horizontal

28) _____

29) $\left(-\frac{5}{7}, -\frac{5}{6}\right)$ and $\left(-\frac{3}{7}, -\frac{2}{3}\right)$

A) $\frac{6}{7}$; falls

B) $\frac{3}{7}$; rises

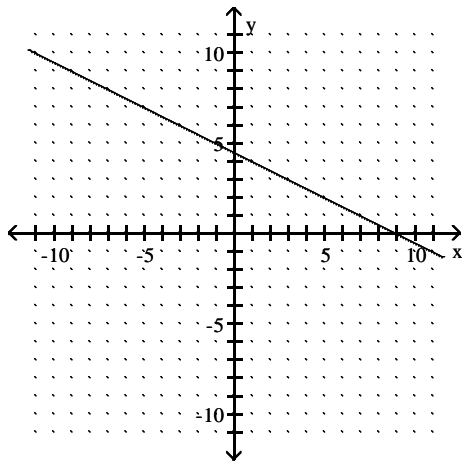
C) $\frac{6}{7}$; rises

D) $\frac{7}{12}$; rises

29) _____

Find the slope of the line.

30)



A) $-\frac{1}{2}$

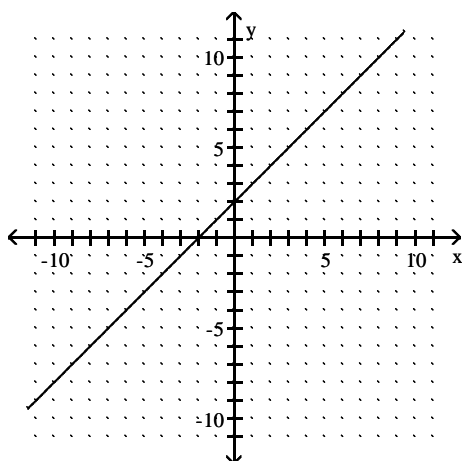
B) $\frac{1}{2}$

C) 2

D) -2

30) _____

31)



A) -1

B) -2

C) 1

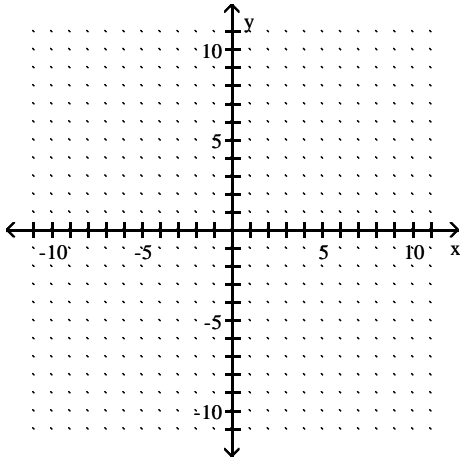
D) 2

31) _____

Find the slope of the line and sketch the graph.

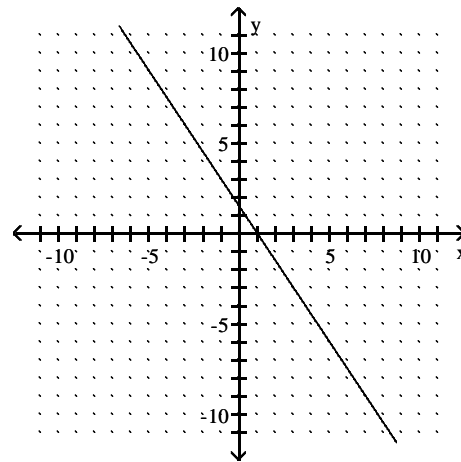
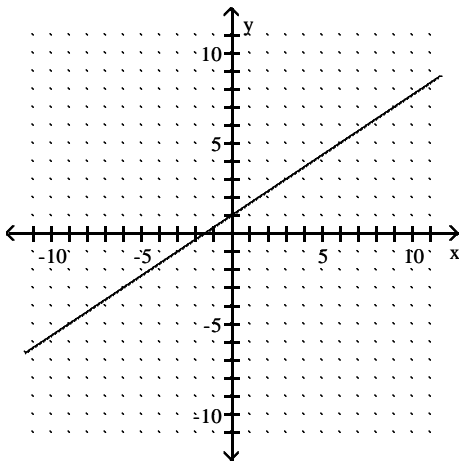
32) $-3y = -2x - 3$

32) _____



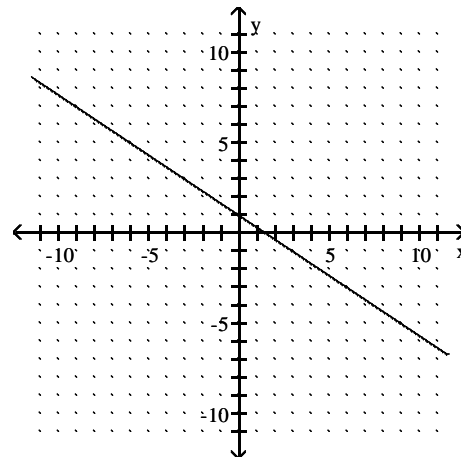
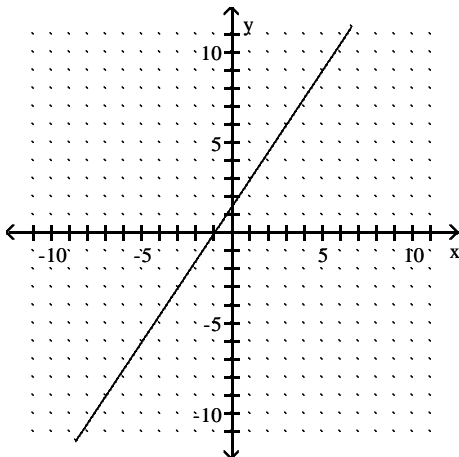
A) Slope: $\frac{2}{3}$

B) Slope: $\frac{3}{2}$



C) Slope: $-\frac{3}{2}$

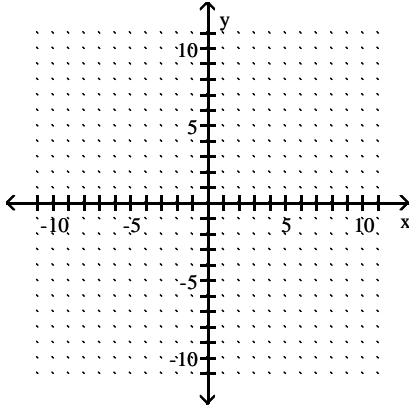
D) Slope: $-\frac{2}{3}$



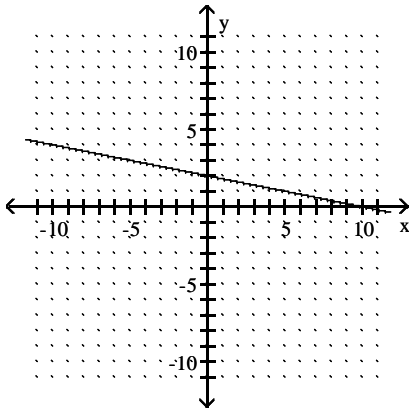
Graph the line described.

33) Through $(10, 0)$; $m = -\frac{1}{5}$

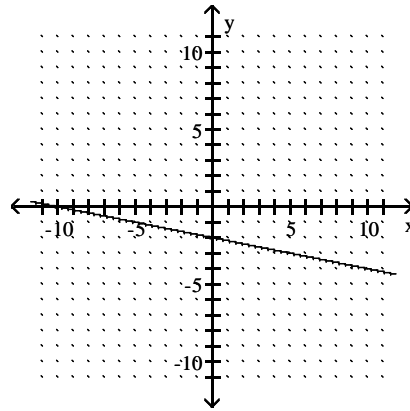
33) _____



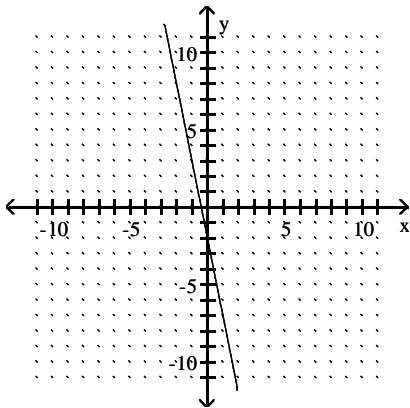
A)



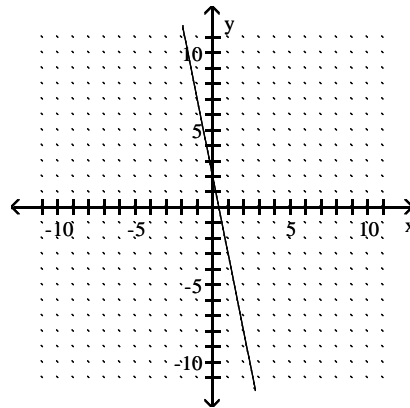
B)



C)

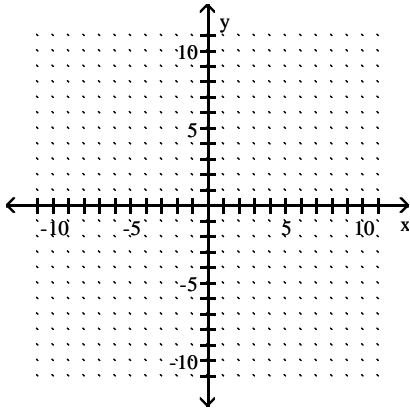


D)

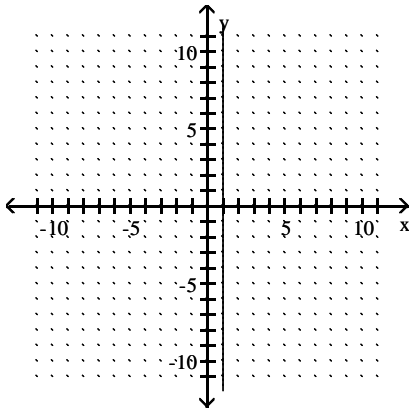


34) $m = 0$; through $(5, -2)$

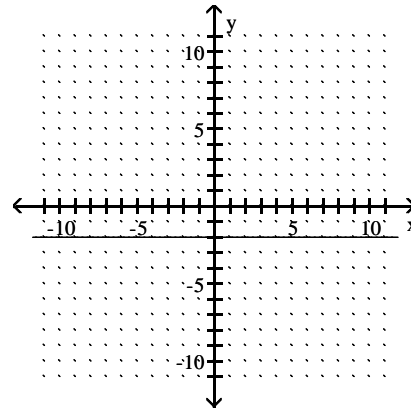
34) _____



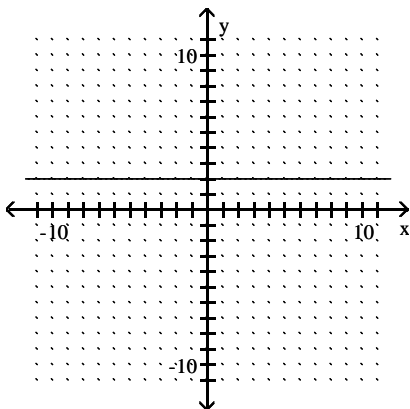
A)



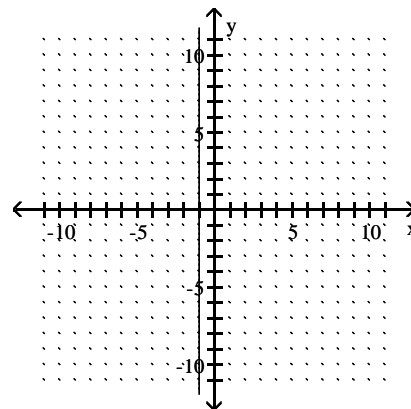
B)



C)



D)



Decide whether the pair of lines is parallel, perpendicular, or neither.

35) $3x - 2y = -9$ and $2x + 3y = -3$

35) _____

A) Parallel

B) Perpendicular

C) Neither

36) $9x + 3y = 12$ and $12x + 4y = 17$

36) _____

A) Parallel

B) Perpendicular

C) Neither

37) The line through $(-20, 5)$ and $(-4, 7)$ and the line through $(-5, 5)$ and $(7, 4)$

37) _____

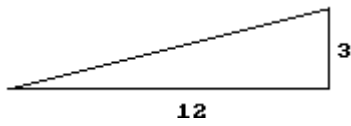
A) Parallel

B) Perpendicular

C) Neither

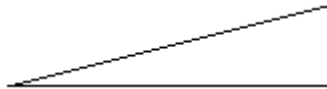
Solve the problem.

- 38) For the incline shown below, how many feet in the vertical direction correspond to 10 ft in the horizontal direction? 38) _____



- A) 3 ft B) 40 ft C) 4 ft D) $\frac{5}{2}$ ft

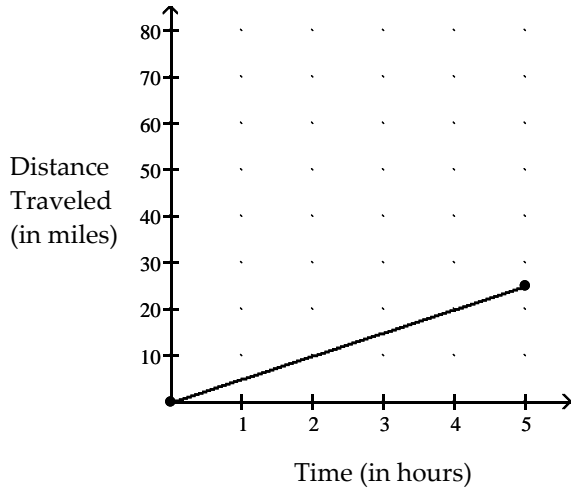
- 39) A motorcycle daredevil is planning a stunt to perform at a county fair. A ramp must be built to give him a 20% grade, or slope. If the vertical height at the end of the ramp must be 12 ft to assure that the stunt is a success, what must be the length of the horizontal run? 39) _____



- A) 60 ft B) 2.16 ft C) 12 ft D) 216 ft

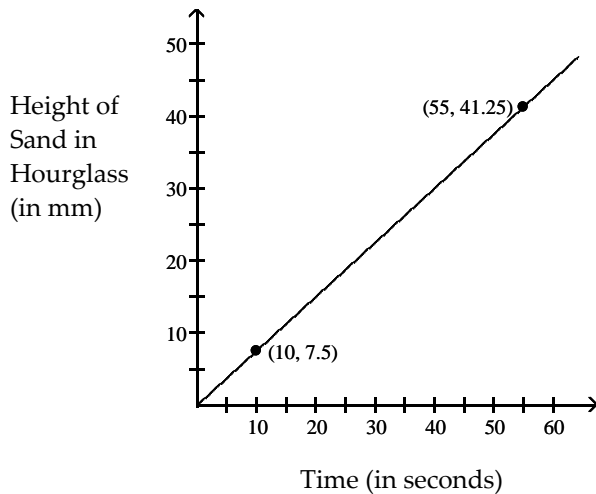
Find the average rate of change illustrated in the graph.

- 40) 40) _____



- A) 25 miles per hour B) 5 miles per hour
C) .2 miles per hour D) 2.5 miles per hour

41)



- A) 1 mm per second
C) .85 mm per second

- B) 1.3 mm per second
D) .75 mm per second

41) _____

Solve the problem. Round your answer, as needed.

42) A deep sea diving bell is being lowered at a constant rate. After 8 minutes, the bell is at a depth of 300 ft. After 40 minutes the bell is at a depth of 1900 ft. What is the average rate of lowering per minute?

- A) 50.0 ft per minute
C) 40.0 ft per minute

- B) 47.5 ft per minute
D) 0.02 ft per minute

42) _____

Tell whether the points are the vertices of a parallelogram (that is not a rectangle), a rectangle, or neither.

43) $(-12, -10), (-10, 0), (3, 7), (1, -3)$

A) Rectangle

B) Neither

C) Parallelogram

43) _____

44) $(-10, -6), (-8, 4), (7, 9), (4, 1)$

A) Rectangle

B) Neither

C) Parallelogram

44) _____

Find the equation in slope-intercept form of the line satisfying the conditions.

45) $m = 7$, passes through $(6, -8)$

A) $y = 7x + 49$

B) $y = 7x - 50$

C) $y = 7x - 48$

D) $y = 8x + 51$

45) _____

46) $m = -5$, passes through $(-8, 4)$

A) $y = 5x - 34$

B) $y = -5x - 36$

C) $5x + y = 36$

D) $y = -5x + 43$

46) _____

47) $m = 9$, passes through $(5, -3)$

A) $y = 9x - 48$

B) $y = 10x + 49$

C) $y = 9x + 47$

D) $y = 9x - 46$

47) _____

48) $m = -6$, passes through $(-6, 2)$

A) $6x + y = 34$

B) $y = -6x + 41$

C) $y = 6x - 32$

D) $y = -6x - 34$

48) _____

49) $m = -\frac{5}{3}$; y-intercept $\left(0, \frac{37}{3}\right)$

A) $y = \frac{5}{3}x + \frac{37}{3}$

B) $y = \frac{5}{3}x - \frac{37}{3}$

C) $y = -\frac{5}{3}x - \frac{37}{3}$

D) $y = -\frac{5}{3}x + \frac{37}{3}$

49) _____

50) $m = -\frac{4}{5}$; y-intercept (0, 9)

50) _____

A) $y = \frac{4}{5}x + 9$

B) $y = -\frac{4}{5}x + 9$

C) $y = -\frac{4}{5}x - 9$

D) $y = \frac{4}{5}x - 9$

51) $m = \frac{3}{4}$; through (0, 1)

51) _____

A) $y = -\frac{3}{4}x + 1$

B) $y = -\frac{3}{4}x - 1$

C) $y = \frac{3}{4}x + 1$

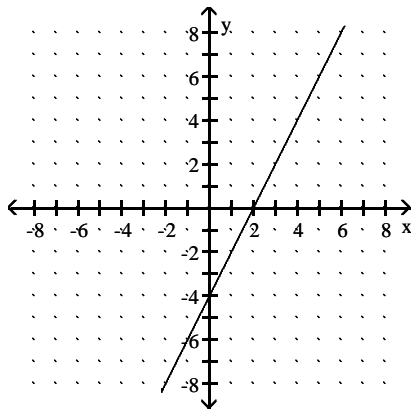
D) $y = \frac{3}{4}x - 1$

Choose the graph that matches the equation.

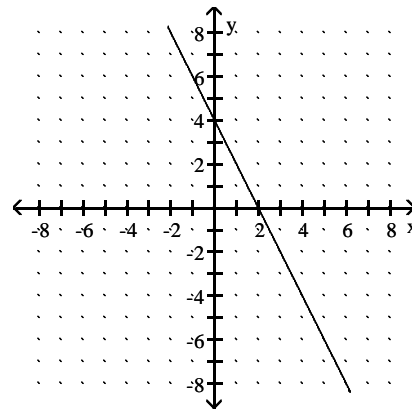
52) $y = -2x - 4$

52) _____

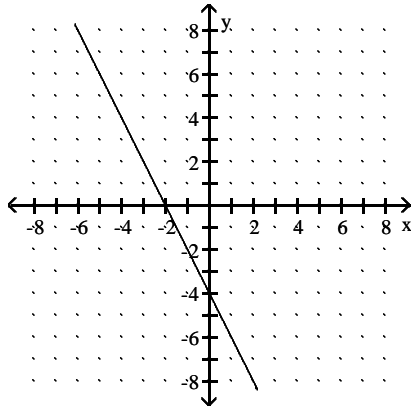
A)



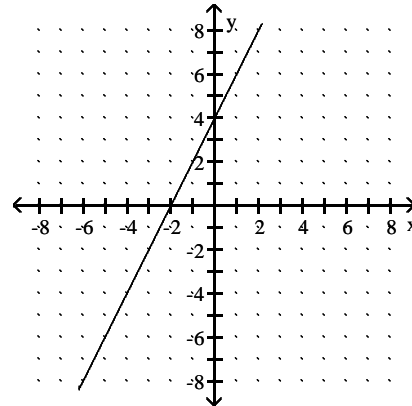
B)



C)



D)



Write the equation in slope-intercept form.

53) $9x + 5y = 5$

53) _____

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

B) $y = \frac{9}{5}x + 1$

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

D) $y = 9x - 5$

54) $3x - 6y = 2$

54) _____

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

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

C) $y = \frac{1}{2}x - \frac{1}{3}$

D) $y = 3x - 2$

55) $-x + 3y = 9$

A) $y = x - 3$

B) $y = \frac{1}{3}x - 9$

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

D) $y = -\frac{1}{3}x + 3$

55) _____

Find the slope and the y-intercept of the line.

56) $5x + 9y = 38$

A) Slope $-\frac{4}{5}$; y-intercept $\left(0, \frac{9}{38}\right)$

B) Slope $\frac{4}{5}$; y-intercept $\left(0, \frac{9}{38}\right)$

C) Slope $\frac{5}{9}$; y-intercept $\left(0, \frac{38}{9}\right)$

D) Slope $-\frac{5}{9}$; y-intercept $\left(0, \frac{38}{9}\right)$

56) _____

57) $4x + 5y = 23$

A) Slope $-\frac{4}{5}$; y-intercept $\left(0, \frac{23}{5}\right)$

B) Slope $\frac{5}{4}$; y-intercept $\left(0, \frac{5}{23}\right)$

C) Slope $-\frac{5}{4}$; y-intercept $\left(0, \frac{5}{23}\right)$

D) Slope $\frac{4}{5}$; y-intercept $\left(0, \frac{23}{5}\right)$

57) _____

58) $4x - 5y = 5$

A) Slope $-\frac{4}{5}$; y-intercept $(0, 1)$

B) Slope $\frac{4}{5}$; y-intercept $(0, -1)$

C) Slope 1 ; y-intercept $(0, 1)$

D) Slope -1 ; y-intercept $(0, -1)$

58) _____

Find an equation of the line that satisfies the conditions. Write the equation in standard form.

59) Through $(2, 3)$; $m = -\frac{3}{8}$

A) $3x + 8y = -30$

B) $8x + 3y = -30$

C) $3x - 8y = 30$

D) $3x + 8y = 30$

59) _____

60) Through $(0, 4)$; $m = -\frac{8}{9}$

A) $8x - 9y = 36$

B) $8x + 9y = 36$

C) $9x + 8y = -36$

D) $8x + 9y = -36$

60) _____

61) Through $(0, 7)$; $m = \frac{7}{5}$

A) $5x - 7y = -35$

B) $7x + 5y = -35$

C) $7x - 5y = -35$

D) $7x - 5y = 35$

61) _____

62) Through $(5, 5)$; $m = -\frac{3}{4}$

A) $3x + 4y = -35$

B) $3x - 4y = 35$

C) $4x + 3y = -35$

D) $3x + 4y = 35$

62) _____

63) Through $(0, 4)$; $m = -\frac{7}{9}$

A) $9x + 7y = -36$

B) $7x + 9y = 36$

C) $7x - 9y = 36$

D) $7x + 9y = -36$

63) _____

64) Through $(0, 4)$; $m = \frac{7}{6}$

A) $7x - 6y = -24$

B) $7x + 6y = -24$

C) $6x - 7y = -24$

D) $7x - 6y = 24$

64) _____

- 65) Through (6, -7); horizontal
 A) $x = 6$ B) $y = -6$ C) $x = 7$ D) $y = -7$ 65) _____
- 66) Through (-6, 3); undefined slope
 A) $y = 3$ B) $x = -6$ C) $y = -6$ D) $x = 3$ 66) _____
- 67) Through $\left(\frac{1}{5}, \frac{2}{5}\right)$; vertical
 A) $x = \frac{1}{5}$ B) $x = \frac{2}{5}$ C) $y = \frac{2}{5}$ D) $y = \frac{1}{5}$ 67) _____

Find an equation of the line passing through the two points. Write the equation in standard form.

- 68) (-5, 1) and (0, 8)
 A) $7x - 5y = -40$ B) $-6x - 8y = -64$ C) $-7x - 5y = -40$ D) $6x + 8y = -64$ 68) _____
- 69) (4, -2) and (0, 3)
 A) $-6x + 3y = -9$ B) $6x - 3y = -9$ C) $5x + 4y = 12$ D) $-5x + 4y = 12$ 69) _____
- 70) (-2, 2) and (1, 10)
 A) $-4x - 9y = -86$ B) $4x + 9y = -86$ C) $-8x - 3y = -22$ D) $8x - 3y = -22$ 70) _____
- 71) (10, 9) and (10, 1)
 A) $x + y = 11$ B) $y = 9$ C) $x + y = 19$ D) $x = 10$ 71) _____

Find an equation of the line satisfying the conditions. Write the equation in slope -intercept form.

- 72) Through (-6, 5); parallel to $-7x + 5y = 57$
 A) $y = \frac{7}{5}x + \frac{67}{5}$ B) $y = -\frac{5}{7}x - \frac{30}{7}$ C) $y = -\frac{7}{5}x - \frac{67}{5}$ D) $y = \frac{5}{7}x + \frac{30}{7}$ 72) _____
- 73) Through (-6, 7); parallel to $3x + 7y = 3$
 A) $y = -\frac{7}{3}x + \frac{7}{3}$ B) $y = \frac{3}{7}x + \frac{3}{7}$ C) $y = -\frac{3}{7}x + \frac{31}{7}$ D) $y = \frac{3}{7}x - \frac{31}{7}$ 73) _____

Solve the problem.

- 74) It costs \$20 per hour plus a flat fee of \$17 for a plumber to make a house call. What is an equation of the form $y = mx + b$ for this situation?
 A) $y = 17x$ B) $y = 17x + 20$ C) $y = 20x$ D) $y = 20x + 17$ 74) _____
- 75) Using a phone card to make a long distance call costs a flat fee of \$0.31 plus \$0.20 per minute starting with the first minute. What is an equation of the form $y = mx + b$ for this situation?
 A) $y = 0.31x$ B) $y = 0.20x$ C) $y = 0.31x + 0.20$ D) $y = 0.20x + 0.31$ 75) _____

The boundary of the graph of the linear inequality will be a _____ line, and the shading will be _____ the line. Fill in the first blank with either solid or dashed. Fill in the second blank with above or below.

- 76) $y < x - \frac{1}{2}$
 A) dashed; below B) solid; below C) dashed; above D) solid; above 76) _____

77) $y > -3x + \frac{2}{3}$

77) _____

A) solid; above

B) solid; below

C) dashed; below

D) dashed; above

78) $y \geq -\frac{2}{3}x + \frac{4}{5}$

78) _____

A) solid; above

B) solid; below

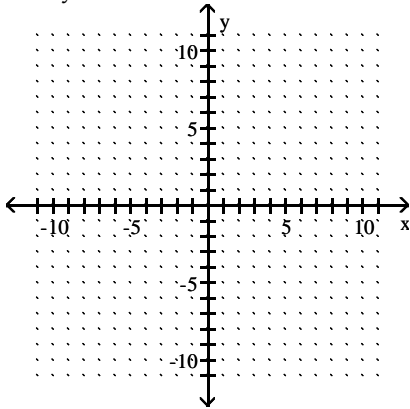
C) dashed; below

D) dashed; above

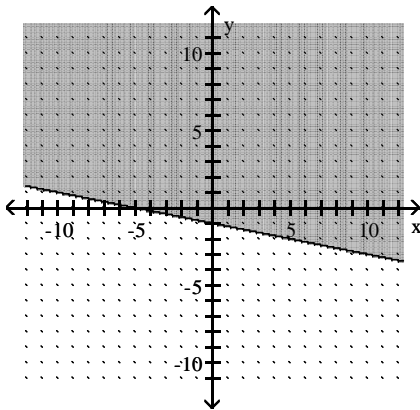
Graph the linear inequality in two variables.

79) $5x + y \leq -1$

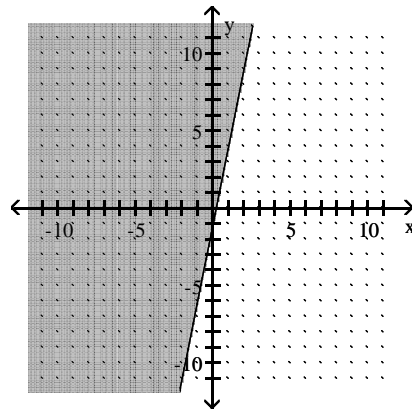
79) _____



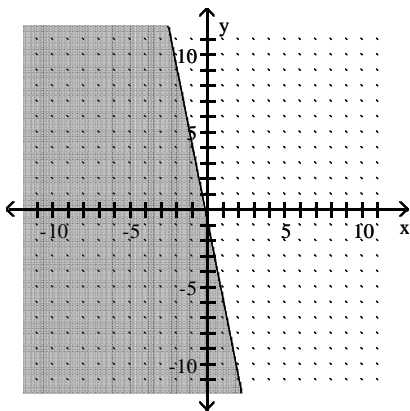
A)



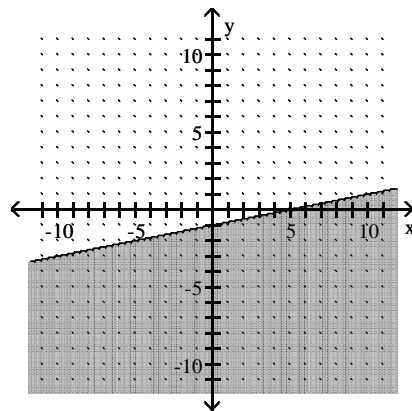
B)



C)

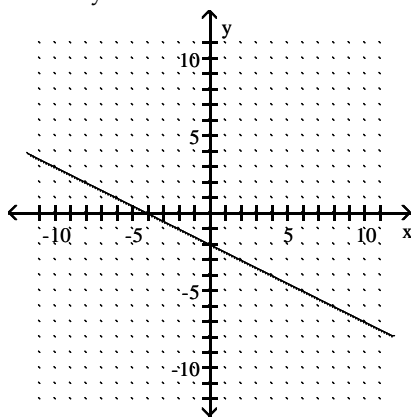


D)

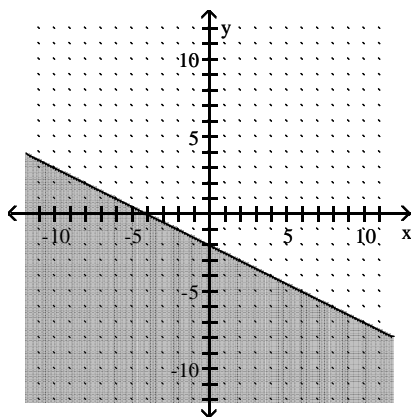


80) $-2x - 4y \leq 8$

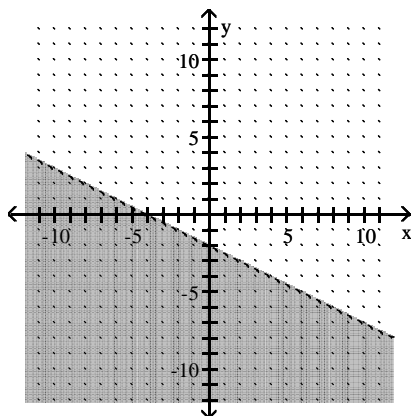
80) _____



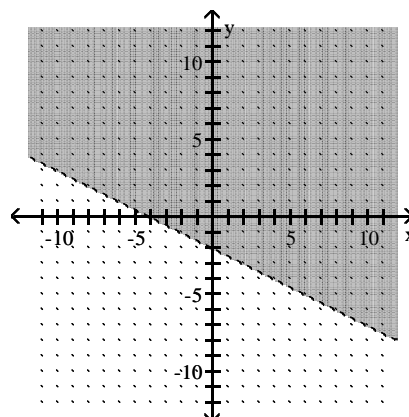
A)



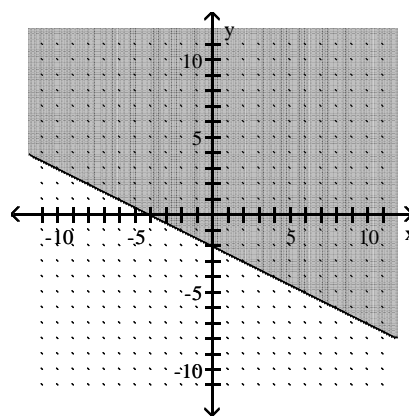
C)



B)



D)



Decide whether the relation is a function.

81) $\{(-1, 7), (1, -9), (4, -9), (7, -5), (10, -3)\}$

81) _____

A) Function

B) Not a function

82) $\{(-4, 1), (-3, -6), (3, -8), (3, 4)\}$

82) _____

A) Not a function

B) Function

83) $\{(-8, 2), (-8, 8), (1, 5), (5, 2), (7, 2)\}$

83) _____

A) Not a function

B) Function

84) $\{(2, -9), (2, -2), (6, 9), (8, -7), (12, 2)\}$

A) Function

B) Not a function

84) _____

85) $\frac{x}{y} \begin{array}{|c|c|c|c|c|} \hline -1 & 3 & 4 & 7 & 10 \\ \hline 9 & 5 & -1 & 9 & 3 \\ \hline \end{array}$

A) Function

B) Not a function

85) _____

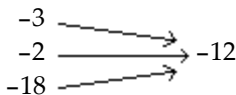
86) $\frac{x}{y} \begin{array}{|c|c|c|c|c|} \hline -8 & -8 & 2 & 6 & 8 \\ \hline 2 & 1 & -2 & -3 & 3 \\ \hline \end{array}$

A) Function

B) Not a function

86) _____

87)

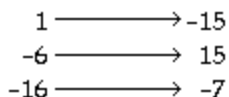


A) Function

B) Not a function

87) _____

88)

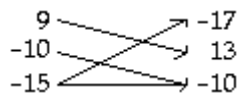


A) Function

B) Not a function

88) _____

89)



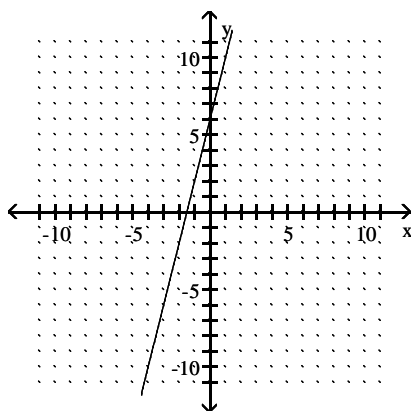
A) Function

B) Not a function

89) _____

Decide whether the relation is a function, and give the domain and range.

90)



A) Not a function; domain: $(-\infty, 0) \cup (0, \infty)$; range: $(-\infty, \infty)$

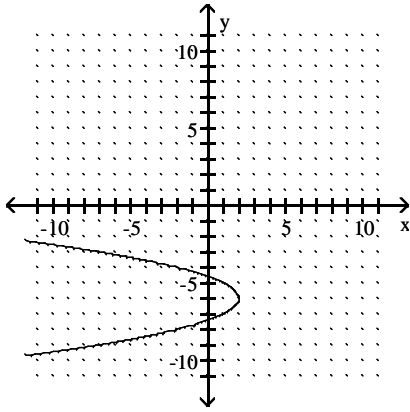
B) Function; domain: $(-\infty, \infty)$; range: $(-\infty, \infty)$

C) Not a function; domain: $(-\infty, \infty)$; range: $(-\infty, \infty)$

D) Function; domain: $(-\infty, 0) \cup (0, \infty)$; range: $(-\infty, \infty)$

90) _____

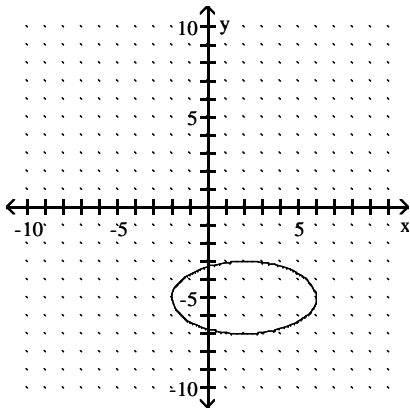
91)



- A) Not a function; domain: $(-\infty, 2]$; range: $(-\infty, \infty)$
 B) Function; domain: $(-\infty, \infty)$; range: $(-\infty, \infty)$
 C) Function; domain: $(-\infty, 2]$; range: $(-\infty, \infty)$
 D) Not a function; domain: $(-\infty, \infty)$; range: $(-\infty, \infty)$

91) _____

92)



- A) Not a function; domain: $[-2, 6]$; range: $[-7, -3]$
 B) Function; domain: $[-7, -3]$; range: $[-2, 6]$
 C) Not a function; domain: $[-7, -3]$; range: $[-2, 6]$
 D) Function; domain: $[-2, 6]$; range: $[-7, -3]$

92) _____

Solve the problem.93) Find $f(4)$ when $f(x) = x^2 - 4x + 2$.

A) 30

B) 2

C) -2

D) 34

93) _____

94) Find $f(-4)$ when $f(x) = 5x^2 + 2x + 5$.

A) 67

B) 13

C) 77

D) 93

94) _____

95) Find $f(k)$ when $f(x) = 3x^2 + 4x + 5$.A) $3k^2 + 4k + 25$ B) $9k^2 + 16k + 25$ C) $3k^2 + 4k + 5$ D) $3k^2 + 16k + 5$

95) _____

96) Find $g(a + 1)$ when $g(x) = 3x + 2$.A) $\frac{1}{3}a + 2$ B) $3a - 1$ C) $3a + 5$ D) $3a + 2$

96) _____

Evaluate the function.

97) Find $f(0)$ if $f = \{(-2, 3), (3, 0), (0, 5), (5, -2)\}$

A) None of these

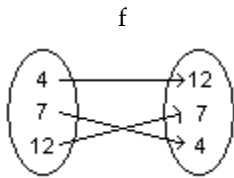
B) (5, 3)

C) 5

D) 3

97) _____

98) Find $f(4)$



A) 7

B) (12, 7)

C) 12

D) None of these

98) _____

An equation that defines y as a function of x is given. Solve for y in terms of x , and replace y with the function notation $f(x)$.

99) $5x - 6y = 5$

A) $f(x) = 5 - 5x$

B) $f(x) = \frac{5 - 5x}{-6}$

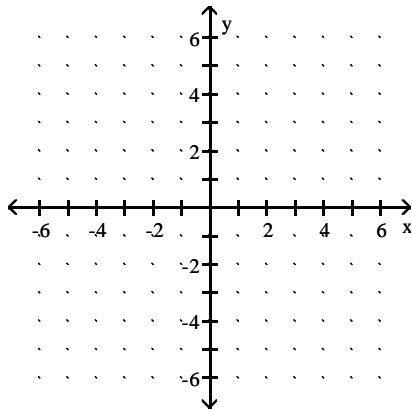
C) $f(x) = 5 - \frac{5x}{6}$

D) $f(x) = -5x - \frac{5}{6}$

99) _____

Graph the linear function. Give the domain and range.

100) $f(x) = 4x + 5$

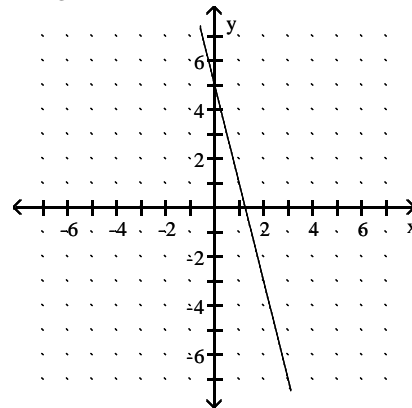
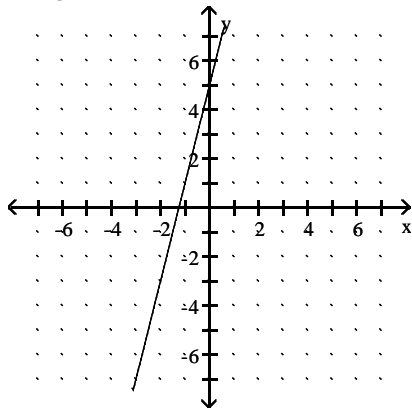


A) Domain: $(-\infty, \infty)$

Range: $(-\infty, \infty)$

B) Domain: $(-\infty, \infty)$

Range: $(-\infty, \infty)$



100) _____