HW2 Date: _____ Name_____

Use Scantron 882E to transfer the answers. Be sure you keep your scantron CLEAN and FLAT before its submission.
MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

Name the quadrant in which the point is located.

1) (–15, –5) 1) _____

A) I B) II C) III D) IV

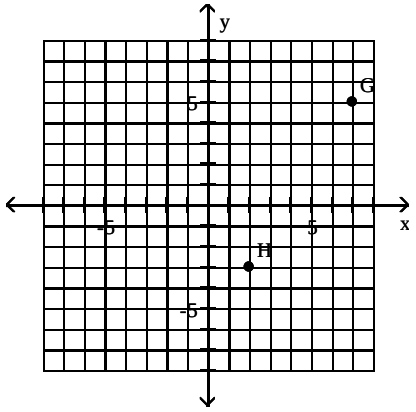
I

2) (3, 5), (–3, 0) 2) _____

A) I and G B) D and G C) L and J D) D and J

Give the coordinates of the points shown on the graph.

3) 3) _____

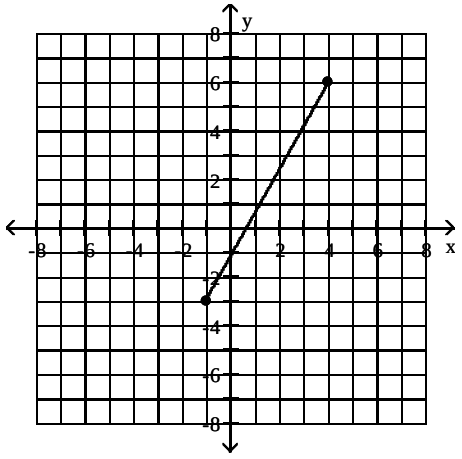


A) G = (7, –3), H = (5, –3) B) G = (5, 7), H = (–3, 2)

C) G = (7, 5), H = (2, –3) D) G = (7, 5), H = (–3, 2)

Find the distance d(P_1, P_2) between the points P_1 and P_2.

4) 4) _____



A) $2\sqrt{14}$ B) 4 C) $\sqrt{106}$ D) 45

5) $P_1 = (2, 4)$; $P_2 = (-2, -3)$ 5) _____

A) $\sqrt{65}$ B) 28 C) $\sqrt{33}$ D) 3

Decide whether or not the points are the vertices of a right triangle.

6) (–9, –4), (–3, –2), (3, –9) 6) _____

A) Yes B) No

Solve the problem.

7) Find all values of k so that the given points are $\sqrt{29}$ units apart. 7) _____
(–5, 5), (k, 0)

A) –3, –7 B) –7 C) 7 D) 3, 7

8) A rectangular city park has a jogging loop that goes along a length, width, and diagonal of the park. To the nearest yard, find the length of the jogging loop, if the length of the park is 125 yards and its width is 75 yards. 8) _____

A) 346 yards B) 145 yards C) 345 yards D) 146 yards

Find the midpoint of the line segment joining the points P_1 and P_2.

9) $P_1 = (8, 2)$; $P_2 = (4, 4)$ 9) _____

A) (12, 6) B) (6, 3) C) (3, 6) D) (4, –2)

10) $P_1 = (0.3, -0.1)$; $P_2 = (-2.4, -1.4)$ 10) _____

A) (–0.75, –1.05) B) (–1.05, –0.75) C) (–1.35, –0.65) D) (–0.65, –1.35)

Solve the problem.

11) If (–8, –9) is the endpoint of a line segment, and (–12, –6) is its midpoint, find the other endpoint. 11) _____

A) (–2, –17) B) (–16, –3) C) (–16, –12) D) (0, –15)

Determine whether the given point is on the graph of the equation.

12) Equation: $y = x^3 - \sqrt{x}$ 12) _____
Point: (0, 0)

A) Yes B) No

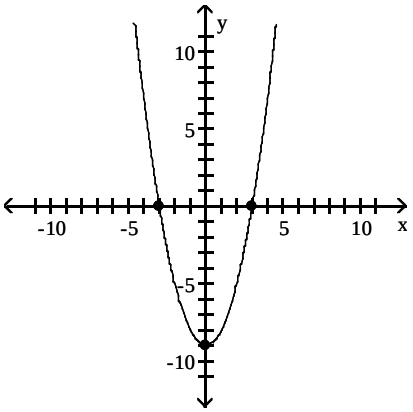
13) Equation: $x^2 - y^2 = 16$ 13) _____
Point: (4, 0)

A) Yes B) No

Graph the equation by plotting points.

14) $y = -x^2 + 9$ 14) _____

A)



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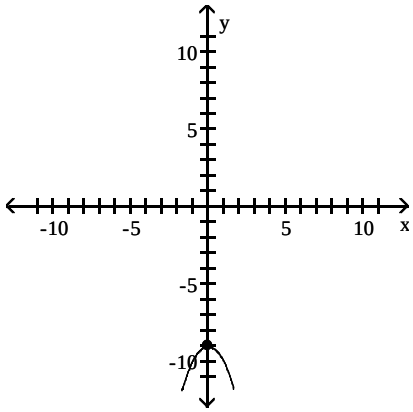

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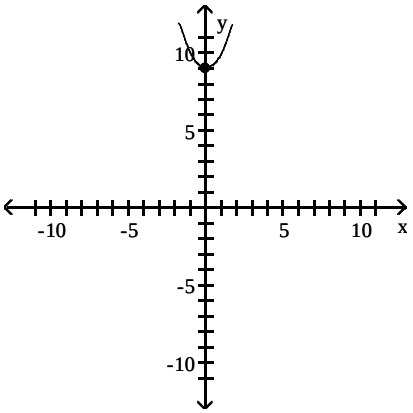

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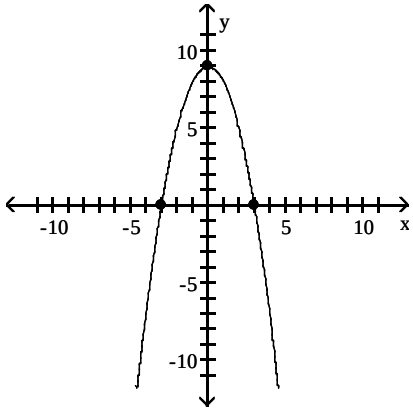
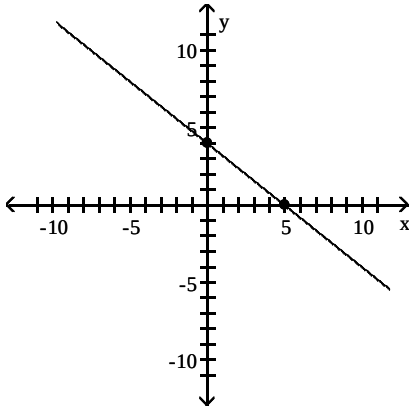


15) $4x + 5y = 20$ 15) _____

A)



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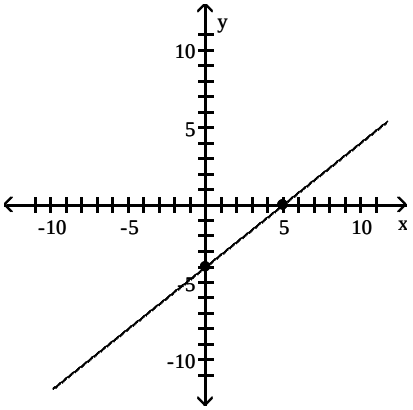

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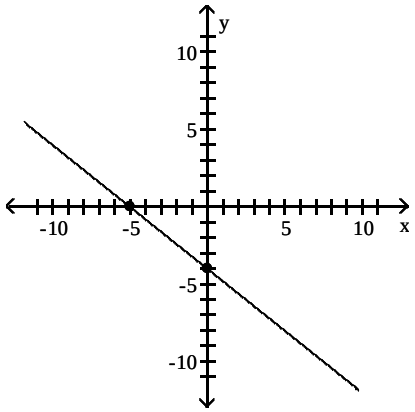

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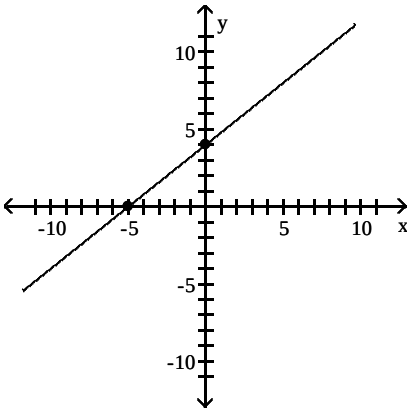


Solve the problem.

16) If (a, 3) is a point on the graph of $y = 2x - 5$, what is a? 16) _____

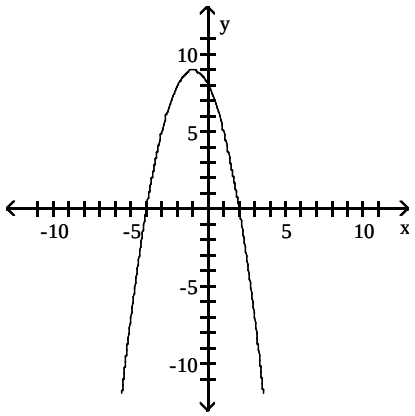
A) 4 B) –1 C) 1 D) –4

17) If (3, b) is a point on the graph of $3x - 2y = 17$, what is b? 17) _____

A) –4 B) 4 C) $\frac{11}{3}$ D) $\frac{23}{3}$

List the intercepts of the graph.

18) 18) _____



A) (–4, 0), (0, 8), (0, 2)
B) (–4, 0), (0, 8), (2, 0)
C) (0, –4), (8, 0), (0, 2)
D) (0, –4), (0, 8), (2, 0)

List the intercepts for the graph of the equation.

19) $y = x + 5$ 19) _____

A) (–5, 0), (0, –5)
B) (5, 0), (0, –5)
C) (–5, 0), (0, 5)
D) (5, 0), (0, 5)

20) $y^2 = x + 1$ 20) _____

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

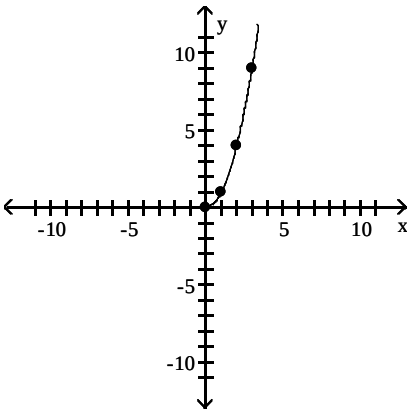
21) $y = x^4 - 16$ 21) _____

A) (0, 16)
B) (0, 16), (–2, 0), (2, 0)
C) (0, –16)
D) (0, –16), (–2, 0), (2, 0)

Graph the equation by plotting points.

22) $y = \sqrt{x}$ 22) _____

A)



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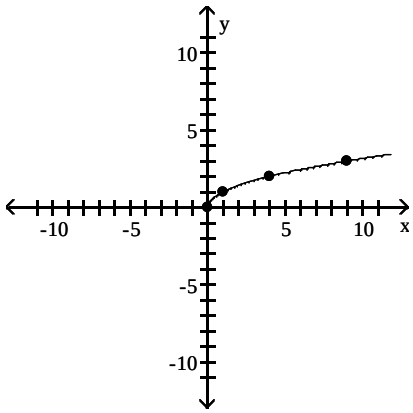

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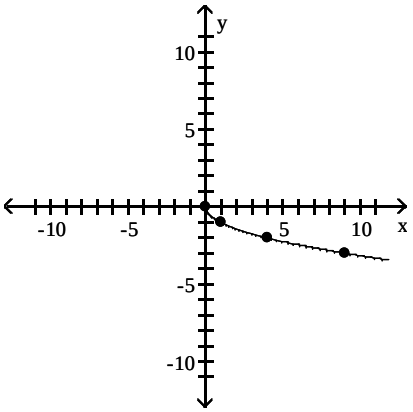
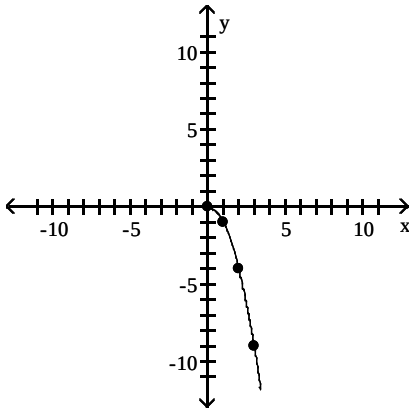
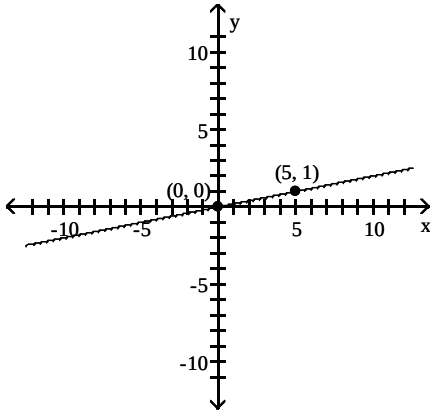


D)



Find the slope of the line through the points and interpret the slope.

23) 23) _____



A) $-\frac{1}{5}$; for every 5–unit increase in x, y will decrease by 1 unit

B) –5; for every 1–unit increase in x, y will decrease by 5 units

C) $\frac{1}{5}$; for every 5–unit increase in x, y will increase by 1 unit

D) 5; for every 1–unit increase in x, y will increase by 5 units

Find an equation for the line with the given properties.

24) Slope undefined; containing the point (–5, –2) 24) _____

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

25) Vertical line; containing the point (3.6, –5.7) 25) _____

A) x = –5.7 B) x = 3.6 C) x = 0 D) x = 2.1

Find the slope–intercept form of the equation of the line with the given properties.

26) Horizontal; containing the point (–3, 7) 26) _____

A) y = 7 B) x = 7 C) y = –3 D) x = –3

27) Horizontal; containing the point $\left(-\frac{1}{2}, 5\right)$ 27) _____

A) y = –5 B) y = 5 C) $y = -\frac{1}{2}$ D) y = 0

28) Horizontal; containing the point (–8, 6) 28) _____

A) y = –8 B) x = 6 C) x = –8 D) y = 6

29) Horizontal; containing the point $\left(-\frac{4}{7}, 6\right)$ 29) _____

A) $y = -\frac{4}{7}$ B) y = 0 C) y = 6 D) y = –6

Find an equation for the line, in the indicated form, with the given properties.

30) Containing the points (8, –5) and (–3, 7); general form 30) _____

A) –12x + 11y = 41 B) 12x + 11y = 41

C) 13x – 10y = –31 D) –13x + 10y = –31

31) Containing the points (–3, 2) and (2, 9); general form 31) _____

A) 5x + 7y = –53 B) –5x – 7y = –53 C) 7x – 5y = –31 D) –7x – 5y = –31

Solve.

32) The relationship between Celsius (°C) and Fahrenheit (°F) degrees of measuring temperature is linear. Find an equation relating °C and °F if 10°C corresponds to 50°F and 30°C corresponds to 86°F. Use the equation to find the Celsius measure of 33° F. 32) _____

A) $C = \frac{5}{9}F + \frac{160}{9}$; $\frac{325}{9}$ °C B) $C = \frac{5}{9}F - \frac{160}{9}$; $\frac{5}{9}$ °C

C) $C = \frac{9}{5}F - 80$; $-\frac{103}{5}$ °C D) $C = \frac{5}{9}F - 10$; $\frac{25}{3}$ °C

33) The average value of a certain type of automobile was $15,720 in 1991 and depreciated to $4800 in 1996. Let y be the average value of the automobile in the year x, where x = 0 represents 1991. Write a linear equation that relates the average value of the automobile, y, to the year x. 33) _____

A) y = –2184x – 6120 B) y = –2184x + 4800

C) y = –2184x + 15,720 D) $y = -\frac{1}{2184}x - 4800$

Find the slope–intercept form of the equation of the line with the given properties.

34) x–intercept = 5; y–intercept = 6 34) _____

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

Solve.

35) A truck rental company rents a moving truck one day by charging $29 plus $0.09 per mile. Write a linear equation that relates the cost C, in dollars, of renting the truck to the number x of miles driven. What is the cost of renting the truck if the truck is driven 160 miles? 35) _____

A) C = 0.09x – 29; $14.60 B) C = 0.09x + 29; $30.44

C) C = 29x + 0.09; $4640.09 D) C = 0.09x + 29; $43.40

Find the slope and y–intercept of the line.

36) $y = -\frac{6}{7}x + 1$ 36) _____

A) slope $= -\frac{7}{6}$; y–intercept = – 1 B) slope $= -\frac{6}{7}$; y–intercept = 1

C) slope = 1; y–intercept $= -\frac{6}{7}$ D) slope $= \frac{6}{7}$; y–intercept = – 1

37) $9x + 7y = 19$ 37) _____

A) slope $= 9$; y–intercept $= 19$

B) slope $= \frac{9}{7}$; y–intercept $= -\frac{19}{7}$

C) slope $= -\frac{9}{7}$; y–intercept $= \frac{19}{7}$

D) slope $= \frac{9}{7}$; y–intercept $= \frac{19}{7}$

38) $x = 3$ 38) _____

A) slope undefined; y–intercept $= 3$

B) slope $= 0$; y–intercept $= 3$

C) slope $= 3$; y–intercept $= 0$

D) slope undefined; no y–intercept

Find the general form of the equation for the line with the given properties.

39) Slope $= \frac{3}{5}$; y–intercept $= \frac{9}{5}$ 39) _____

A) $3x + 5y = -9$

B) $y = \frac{3}{5}x + \frac{9}{5}$

C) $3x - 5y = -9$

D) $y = \frac{3}{5}x - \frac{9}{5}$

40) Slope $= \frac{2}{9}$; containing (0, 2) 40) _____

A) $-2x + 9y = -18$

B) $-2x + 9y = 18$

C) $9x - 2y = -18$

D) $-2x - 9y = 18$

Find an equation for the line with the given properties.

41) Parallel to the line $x + 5y = 4$; containing the point (0, 0) 41) _____

A) $y = -\frac{1}{5}x + 4$

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

C) $y = \frac{3}{5}$

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

42) Parallel to the line $x = -2$; containing the point (7, 8) 42) _____

A) $x = 8$

B) $y = -2$

C) $x = 7$

D) $y = 8$

43) Parallel to the line $5x + 6y = 4$; x–intercept $= 2$ 43) _____

A) $6x - 5y = -10$

B) $5x + 6y = 10$

C) $5x + 6y = 12$

D) $6x - 5y = 12$

44) Perpendicular to the line $y = 3x - 1$; containing the point $(-4, 1)$ 44) _____

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

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

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

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

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

45) $3x - 2y = 6$ 45) _____

$2x + 3y = 10$

A) parallel

B) perpendicular

C) neither

46) $3x - 4y = -18$ 46) _____

$8x + 6y = 7$

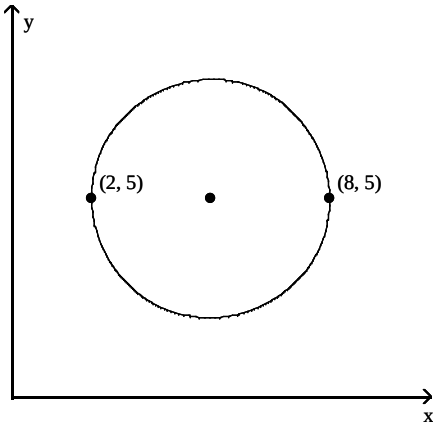
A) parallel

B) perpendicular

C) neither

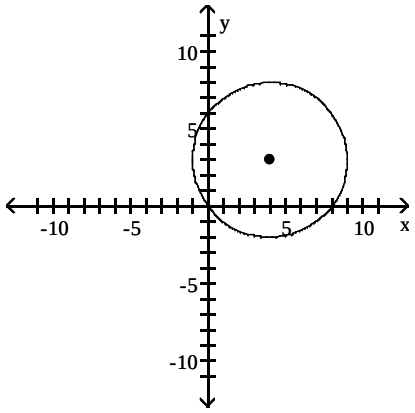
Write the standard form of the equation of the circle.

47) 47) _____



A) $(x + 5)^2 + (y + 5)^2 = 3$
B) $(x - 5)^2 + (y - 5)^2 = 3$
C) $(x + 5)^2 + (y + 5)^2 = 9$
D) $(x - 5)^2 + (y - 5)^2 = 9$

48) 48) _____



A) $(x - 4)^2 + (y - 3)^2 = 25$
B) $(x + 4)^2 + (y + 3)^2 = 25$
C) $(x + 3)^2 + (y + 4)^2 = 25$
D) $(x - 3)^2 + (y - 4)^2 = 25$

Write the standard form of the equation of the circle with radius r and center (h, k).

49) r = 3; (h, k) = (–6, 2) 49) _____

A) $(x - 6)^2 + (y + 2)^2 = 3$
B) $(x - 6)^2 + (y + 2)^2 = 9$
C) $(x + 6)^2 + (y - 2)^2 = 9$
D) $(x + 6)^2 + (y - 2)^2 = 3$

Solve the problem.

50) Find the equation of a circle in standard form where C(6, –2) and D(–4, 4) are endpoints of a diameter. 50) _____

A) $(x + 1)^2 + (y + 1)^2 = 136$
B) $(x - 1)^2 + (y - 1)^2 = 34$
C) $(x - 1)^2 + (y - 1)^2 = 136$
D) $(x + 1)^2 + (y + 1)^2 = 34$