MIAMI DADE COLLEGE
INTERAMERICAN CAMPUS
DEPARTMENT OF MATHEAMATICS
COLLEGE ALGEBRA
STUDY GUIDE
GRAPHS

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

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

1) $P_1 = (4, -7)$; $P_2 = (2, -1)$ 1) _____

A) $32\sqrt{2}$ B) 8 C) $2\sqrt{10}$ D) 32

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

2) $P_1 = (4, 9)$; $P_2 = (1, 6)$ 2) _____

A) $(\frac{5}{2}, \frac{15}{2})$ B) $(\frac{15}{2}, \frac{5}{2})$ C) (3, 3) D) (5, 15)

List the intercepts for the graph of the equation.

3) $x^2 + y - 36 = 0$ 3) _____

A) (6, 0), (0, 36), (0, -36)
B) (0, -6), (36, 0), (0, 6)
C) (-6, 0), (0, 36), (6, 0)
D) (-6, 0), (0, -36), (6, 0)

4) $4x^2 + 9y^2 = 36$ 4) _____

A) (-2, 0), (-3, 0), (3, 0), (2, 0)
B) (-9, 0), (0, -4), (0, 4), (9, 0)
C) (-3, 0), (0, -2), (0, 2), (3, 0)
D) (-4, 0), (-9, 0), (9, 0), (4, 0)

Determine whether the graph of the equation is symmetric with respect to the x-axis, the y-axis, and/or the origin.

5) $x^2 + y - 64 = 0$ 5) _____

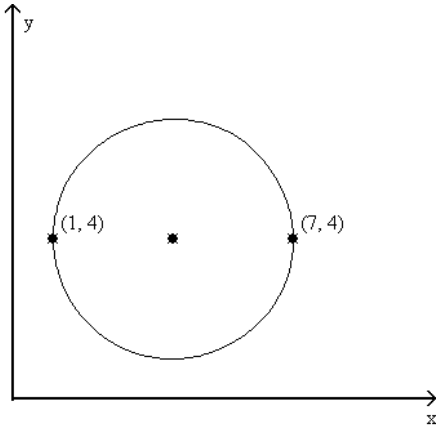
A) origin
B) y-axis
C) x-axis
D) x-axis, y-axis, origin
E) none

6) $9x^2 + 16y^2 = 144$ 6) _____

A) x-axis
B) y-axis
C) origin
D) x-axis, y-axis, origin
E) none

Write the standard form of the equation of the circle.

7) 7) _____



A) $(x - 4)^2 + (y - 4)^2 = 3$
B) $(x - 4)^2 + (y - 4)^2 = 9$
C) $(x + 4)^2 + (y + 4)^2 = 3$
D) $(x + 4)^2 + (y + 4)^2 = 9$

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

8) r = 6; (h, k) = (10, -4) 8) _____

A) $(x + 10)^2 + (y - 4)^2 = 6$
B) $(x + 10)^2 + (y - 4)^2 = 36$
C) $(x - 10)^2 + (y + 4)^2 = 36$
D) $(x - 10)^2 + (y + 4)^2 = 6$

Solve the problem.

9) Find the equation of a circle in standard form where C(6, -2) and D(-4, 4) are endpoints of a diameter. 9) _____

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

Find the center (h, k) and radius r of the circle with the given equation.

10) $(x - 2)^2 + (y + 8)^2 = 36$ 10) _____

A) (h, k) = (-8, 2); r = 36
B) (h, k) = (-8, 2); r = 6
C) (h, k) = (2, -8); r = 36
D) (h, k) = (2, -8); r = 6

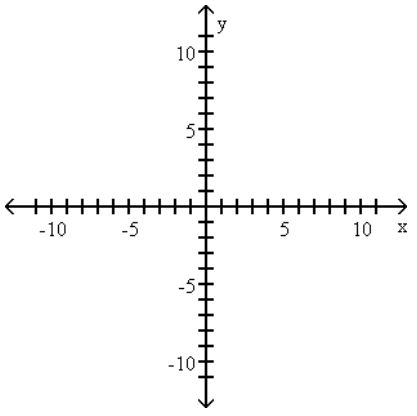
Find the center (h, k) and radius r of the circle.

11) $2(x + 2)^2 + 2(y + 3)^2 = 14$ 11) _____

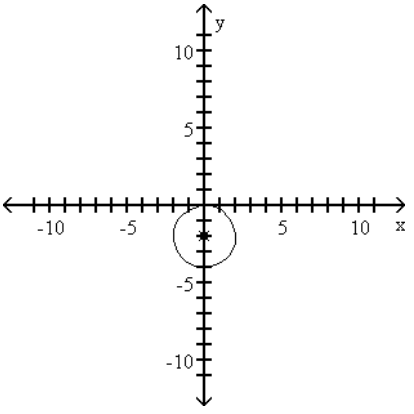
A) (h, k) = (-2, -3); $r = \sqrt{7}$
B) (h, k) = (2, 3); $r = 2\sqrt{7}$
C) (h, k) = (2, 3); $r = \sqrt{7}$
D) (h, k) = (-2, -3); $r = 2\sqrt{7}$

Graph the circle with radius r and center (h, k).

12) r = 2; (h, k) = (0, 2) 12) _____



A)



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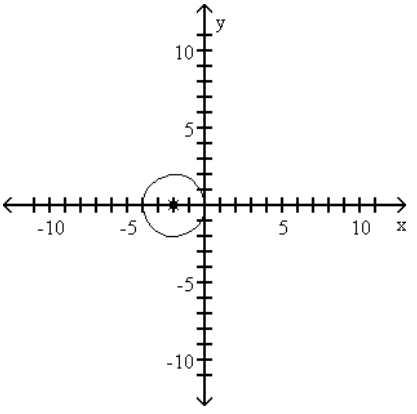

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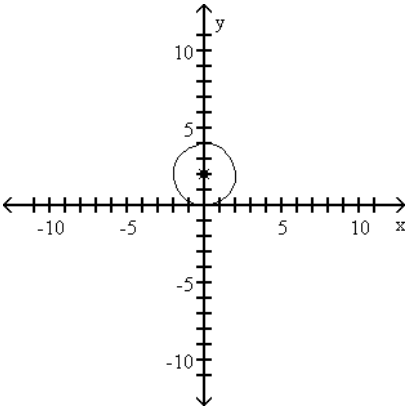

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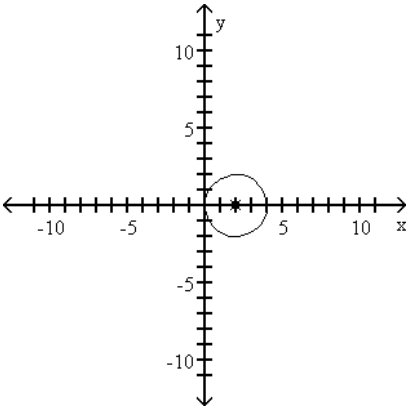
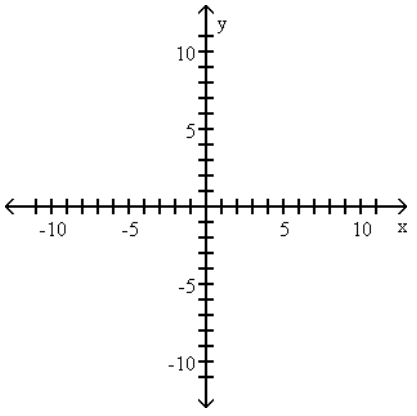
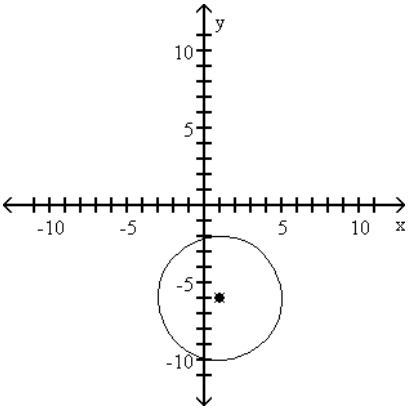


Find the center (h, k) and radius r of the circle. Graph the circle.

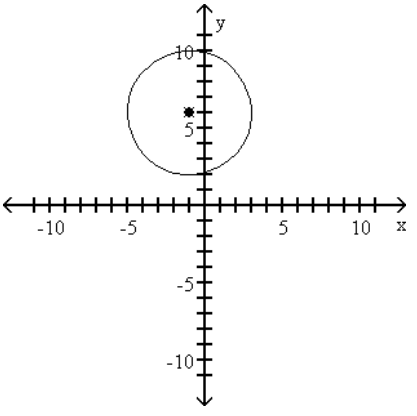
13) $x^2 + y^2 - 2x - 12y + 21 = 0$ 13) _____



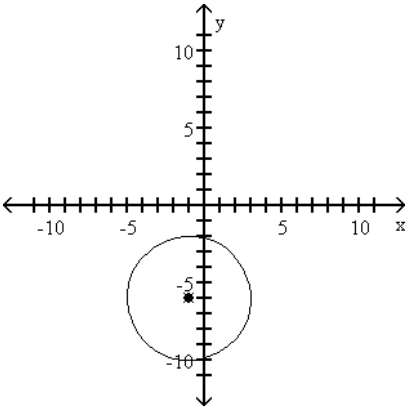
A) (h, k) = (1, -6); r = 4



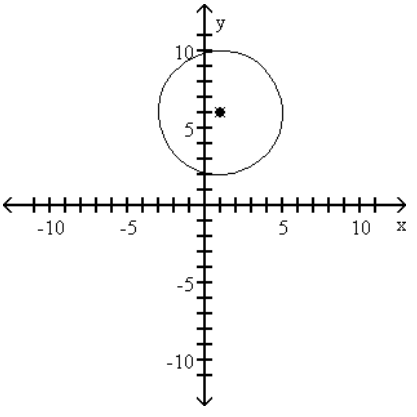
B) (h, k) = (-1, 6); r = 4



C) (h, k) = (-1, -6); r = 4

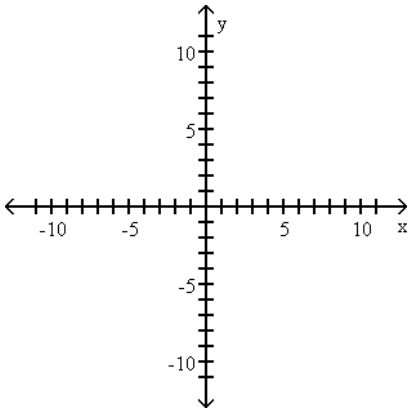


D) (h, k) = (1, 6); r = 4

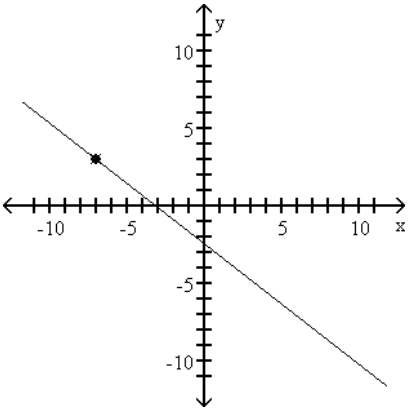


Graph the line containing the point P and having slope m.

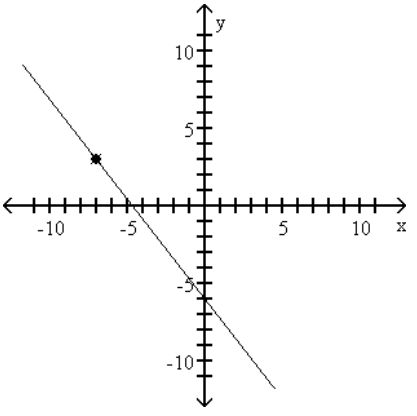
14) P = (-7, 3); m = $-\frac{7}{9}$ 14) _____



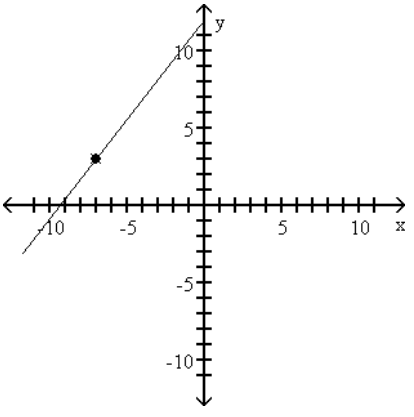
A)



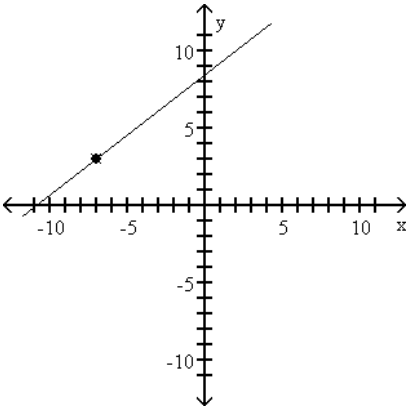
B)



C)



D)



Solve the problem.

15) Find an equation of the vertical line containing the point (-4, -5). 15) _____

A) x = -4 B) y = -4 C) y = -5 D) x = -5

Find the point-slope equation for the line with the given properties.

16) slope = $-\frac{5}{3}$; containing the point (-5, 2) 16) _____

A) $x + 2 = -\frac{5}{3}(y - 5)$ B) $y + 2 = -\frac{5}{3}(x - 5)$

C) $y + 5 = -\frac{5}{3}(x - 2)$ D) $y - 2 = -\frac{5}{3}(x + 5)$

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

17) horizontal; containing the point (2, 4) 17) _____

A) $x = 4$ B) $y = 2$ C) $y = 4$ D) $x = 2$

Solve the problem.

18) Find the slope-intercept form of the equation of the line containing the points (-6, 3) and (8, 8). 18) _____

A) $y = -\frac{5}{14}x + \frac{36}{7}$ B) $y - 3 = \frac{5}{14}(x + 6)$

C) $y = \frac{5}{14}x + \frac{36}{7}$ D) $y = mx + \frac{36}{7}$

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

19) slope = 6; y-intercept = 8 19) _____

A) $y = 8x - 6$ B) $y = 6x + 8$ C) $y = 8x + 6$ D) $y = 6x - 8$

Find the slope and y-intercept of the line.

20) $12x + y = 4$ 20) _____

A) slope = $-\frac{1}{12}$; y-intercept = $\frac{1}{3}$ B) slope = 12; y-intercept = 4

C) slope = -12; y-intercept = 4 D) slope = 3; y-intercept = $\frac{1}{4}$

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

21) Containing the points (-2, -9) and (-4, -2) 21) _____

A) $7x + 2y = -32$ B) $7x - 2y = 32$ C) $-7x + 2y = 32$ D) $-7x + 2y = -32$

Find an equation for the line with the given properties.

22) Parallel to the line $7x + 5y = 3$; containing the point (4, -12) 22) _____

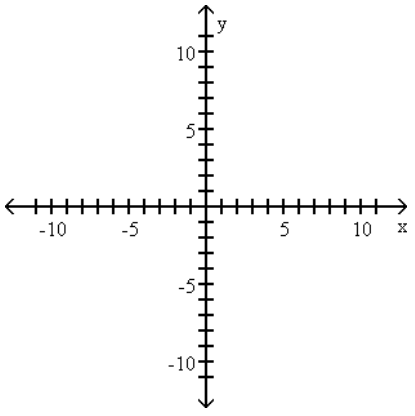
A) $7x + 5y = -32$ B) $4x + 5y = 3$ C) $5x + 7y = -12$ D) $7x - 5y = -32$

23) Perpendicular to the line $y = -3x + 3$; containing the point (-2, 3) 23) _____

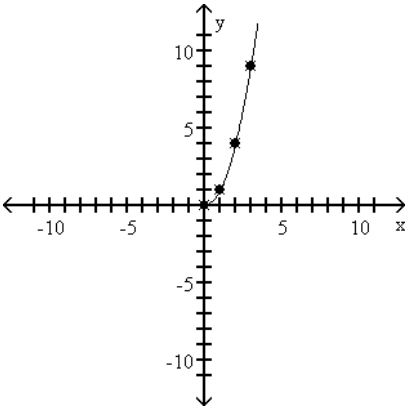
A) $y = -\frac{1}{3}x + \frac{11}{3}$ B) $y = -3x + \frac{11}{3}$ C) $y = \frac{1}{3}x + \frac{11}{3}$ D) $y = 3x + \frac{11}{3}$

Graph the equation by plotting points.

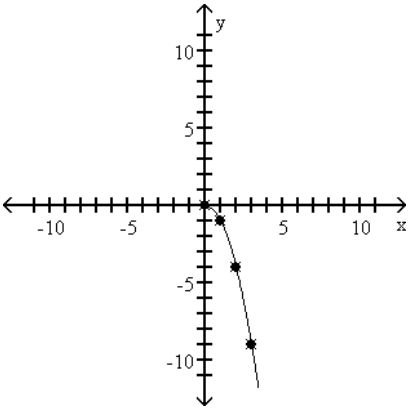
24) $y = \sqrt{x}$ 24) _____



A)



B)



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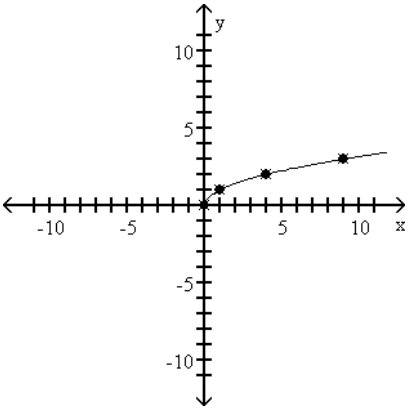
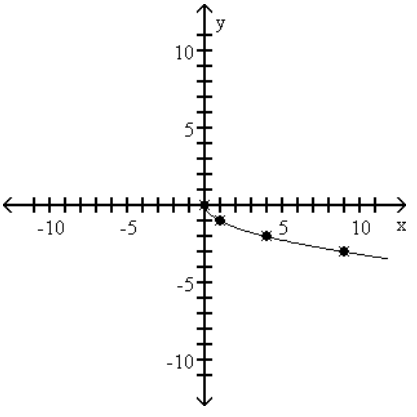
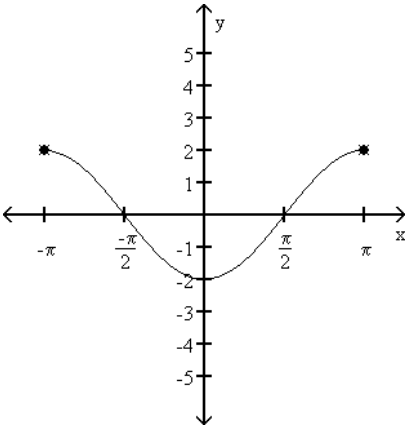


D)



List the intercepts of the graph.

25) 25) _____



A) $(0, -\frac{\pi}{2}), (0, -2), (0, \frac{\pi}{2})$

B) $(0, -\frac{\pi}{2}), (-2, 0), (0, \frac{\pi}{2})$

C) $(-\frac{\pi}{2}, 0), (0, -2), (\frac{\pi}{2}, 0)$

D) $(-\frac{\pi}{2}, 0), (-2, 0), (\frac{\pi}{2}, 0)$