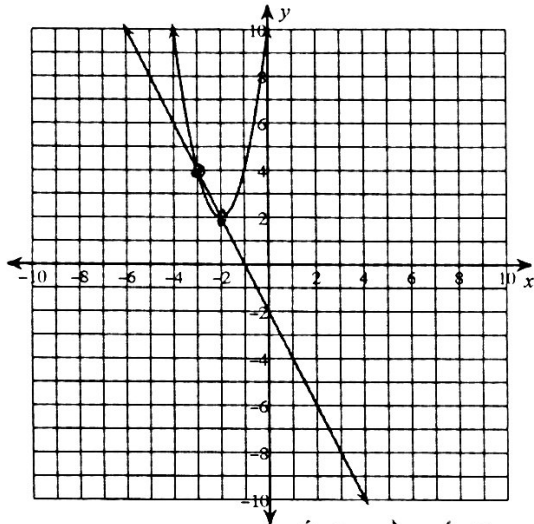


Unit 7 Systems of Equations Review

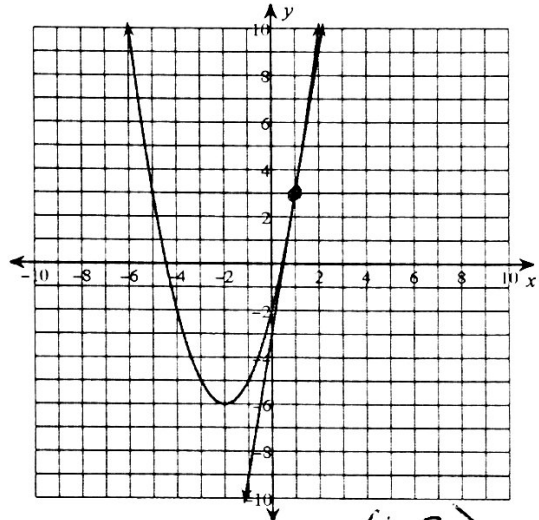
Solve the following systems by graphing.

1)  $y = 2x^2 + 8x + 10$   
 $y = -2x - 2$



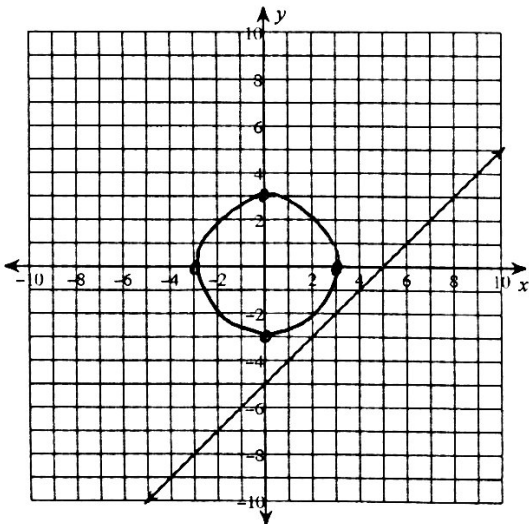
$(-3, 4), (-2, 2)$

2)  $y = x^2 + 4x - 2$   
 $y = 6x - 3$



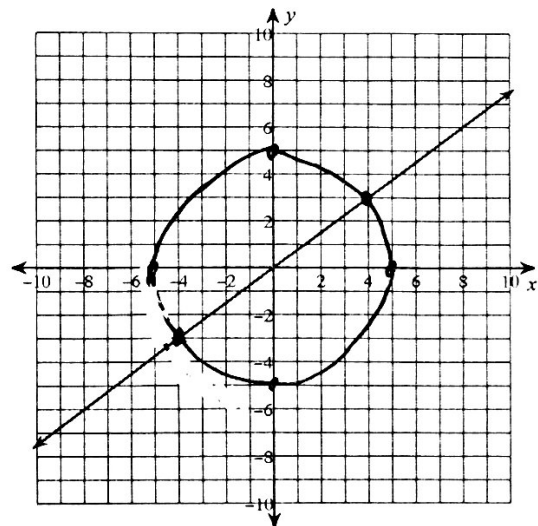
$(1, 3)$

3)  $x^2 + y^2 = 9$   
 $y = x - 5$



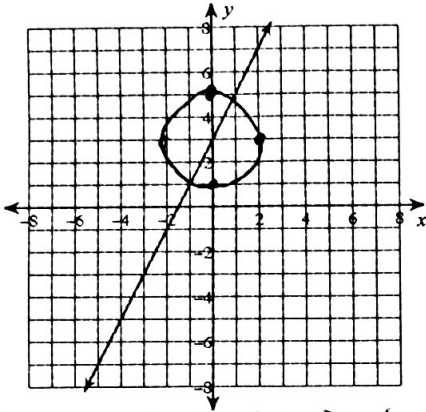
No Solution

4)  $x^2 + y^2 = 25$   
 $y = \frac{3}{4}x$



$(-4, -3), (4, 3)$

$$5) \begin{cases} x^2 + (y - 3)^2 = 4 \\ y = 2x + 3 \end{cases}$$



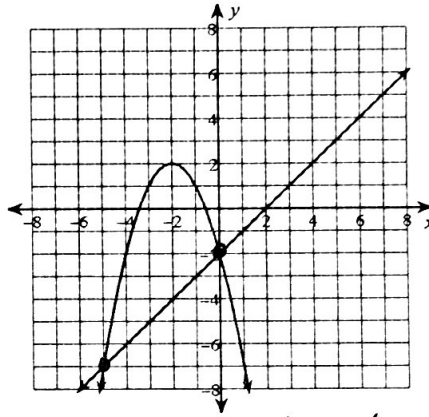
Approximate:  $(-1, 1), (1, 4.8)$

Solve each system by substitution.

$$7) \begin{cases} y = -2 \\ -x - 5y = 9 \end{cases}$$

$(1, -2)$

$$6) \begin{cases} y = -x^2 - 4x - 2 \\ y = x - 2 \end{cases}$$



$(-5, -7), (0, -2)$

$$8) \begin{cases} -8x + 3y = 13 \\ y = 5x + 9 \end{cases}$$

$(-2, -1)$

$$9) \begin{cases} y = x^2 - x - 12 \\ y = x + 3 \end{cases}$$

$(-3, 0), (5, 8)$

$$10) \begin{cases} y = x^2 + 4x + 3 \\ y = 2x + 6 \end{cases}$$

$(-3, 0), (-1, 4)$

11)  $(x + 1)^2 + (y - 4)^2 = 3$   
 $y = -x$   
 $(-4, 4), (-1, 1)$

12)  $x^2 + (y + 2)^2 = 16$   
 $y = x + 2$   
 $(0, 2), (-4, -2)$

13)  $x^2 - 3y = -3$   
 $y = x + 1$   
 $[(0, 1), (3, 4)]$

14)  $y = 3x - 2$   
 $x^2 - 4y = 8$   
 $[(0, -2), (12, 34)]$

- 15) Willie's school is selling tickets to a play. On the first day of ticket sales the school sold 7 adult tickets and 13 child tickets for a total of \$186. The school took in \$252 on the second day by selling 14 adult tickets and 14 child tickets. Find the price of an adult ticket and the price of a child ticket.

adult ticket: \$8, child ticket: \$10

- 16) Julio and Carlos each improved their yards by planting rose bushes and geraniums. They bought their supplies from the same store. Julio spent \$174 on 6 rose bushes and 13 geraniums. Carlos spent \$144 on 12 rose bushes and 9 geraniums. What is the cost of one rose bush and the cost of one geranium?

rose bush: \$3, geranium: \$12

- 17) The admission fee at a small fair is \$1.50 for children and \$4.00 for adults. On a certain day, 2200 people enter the fair and \$5050 is collected. How many children and how many adults attended?

1500 children, 700 adults

**Identify the center and radius of each.**

18)  $(x - 4)^2 + (y - 13)^2 = 9$

Center: (4, 13)

Radius: 3

19)  $(x - 3)^2 + (y - 1)^2 = 64$

Center: (3, 1)

Radius: 8

20)  $(x - 6)^2 + (y - 4)^2 = 16$

Center: (6,4)

Radius : 4

21)  $(x - 3)^2 + (y + 3)^2 = 12$

Center: (3,-3)

Radius:  $2\sqrt{3}$  or  $\sqrt{12}$

22)  $\left(x - \frac{1}{2}\right)^2 + (y - 6)^2 = 81$

Center:  $\left(\frac{1}{2}, 6\right)$

Radius : 9

23)  $(x - 10)^2 + (y + 3)^2 = 169$

Center: ( 10, -3)

Radius : 13

Use the information provided to write the equation of each circle.

- 24) Center:  $(-6, -10)$   
Radius: 5

$$(x + 6)^2 + (y + 10)^2 = 25$$

- 25) Center:  $(-8, -13)$   
Radius: 4

$$(x + 8)^2 + (y + 13)^2 = 16$$

- 26) Center:  $(16, 13)$   
Point on Circle:  $(18, 15)$

$$(x - 16)^2 + (y - 13)^2 = 8$$

- 27) Center:  $(1, 13)$   
Point on Circle:  $(2, 10)$

$$(x - 1)^2 + (y - 13)^2 = 10$$

- 28) Center:  $(0, 12)$   
Point on Circle:  $(-7, 12)$

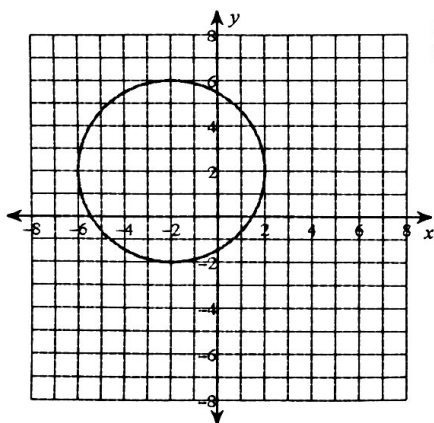
$$x^2 + (y - 12)^2 = 49$$

- 29) Center:  $(-7, -16)$   
Point on Circle:  $(-4, -16)$

$$(x + 7)^2 + (y + 16)^2 = 9$$

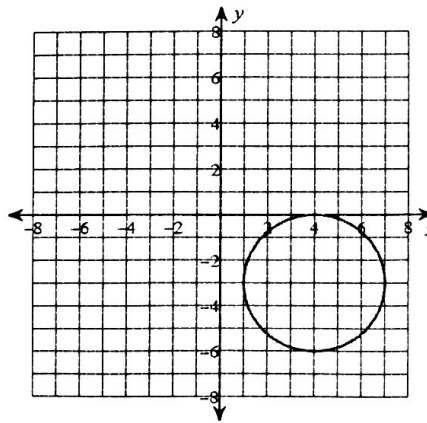
Identify the center and radius of each. Then sketch the graph.

30)  $(x + 2)^2 + (y - 2)^2 = 16$



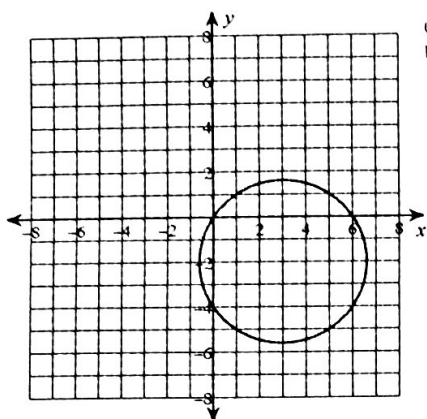
Center:  $(-2, 2)$   
Radius: 4

31)  $(x - 4)^2 + (y + 3)^2 = 9$



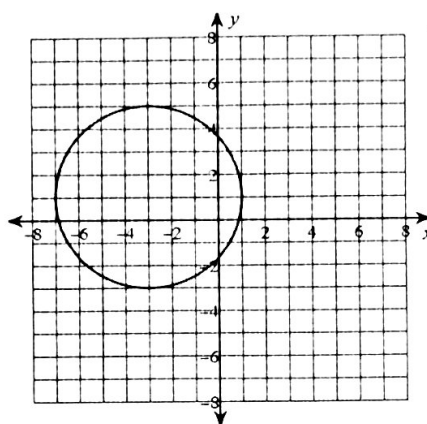
Center:  $(4, -3)$   
Radius: 3

32)  $(x - 3)^2 + (y + 2)^2 = 13$



Center:  $(3, -2)$   
Radius:  $\sqrt{13}$

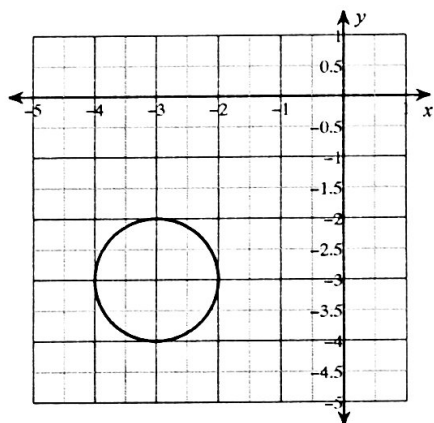
33)  $(x + 3)^2 + (y - 1)^2 = 16$



Center:  $(-3, 1)$   
Radius: 4

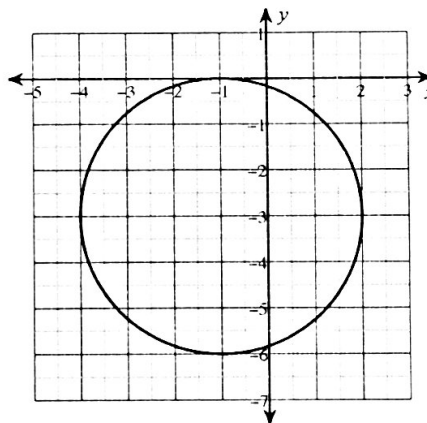
Use the information provided to write the equation of each circle.

34)



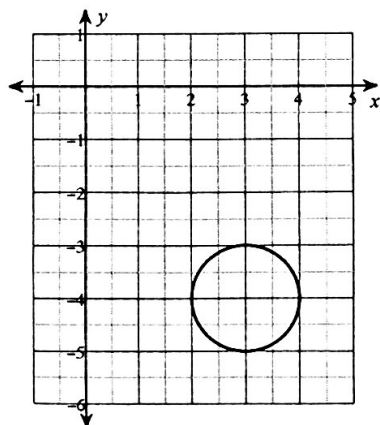
$(x + 3)^2 + (y + 3)^2 = 1$

35)



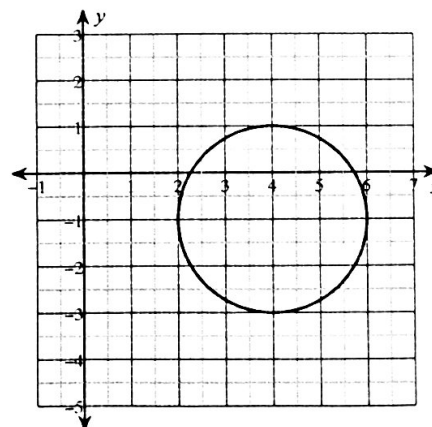
$(x + 1)^2 + (y + 3)^2 = 9$

36)



$(x - 3)^2 + (y + 4)^2 = 1$

37)



$(x - 4)^2 + (y + 1)^2 = 4$