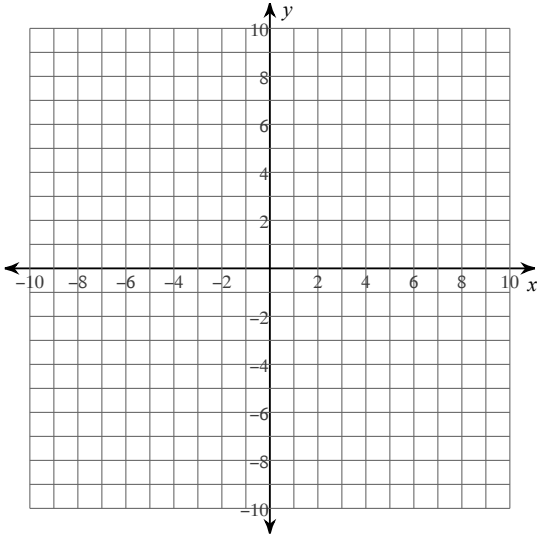


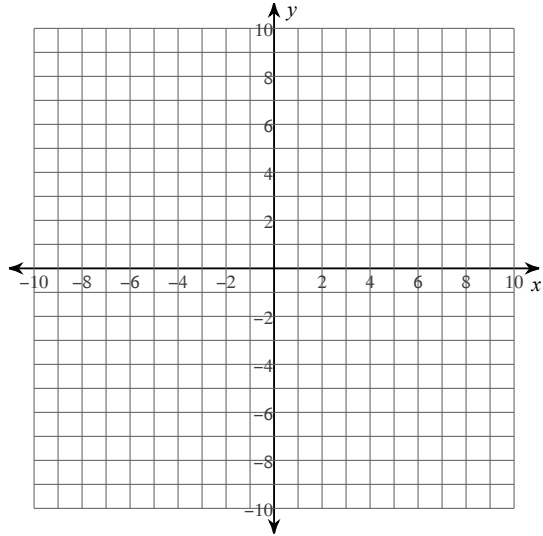
Unit 7 Systems of Equations Review

Solve the following systems by graphing.

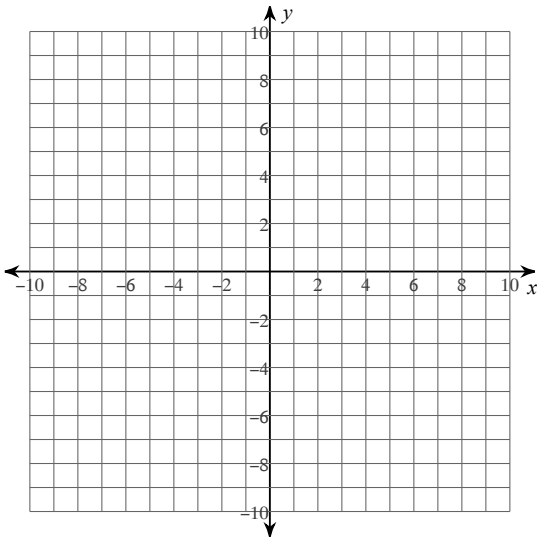
1) $y = 2x^2 + 8x + 10$
 $y = -2x - 2$



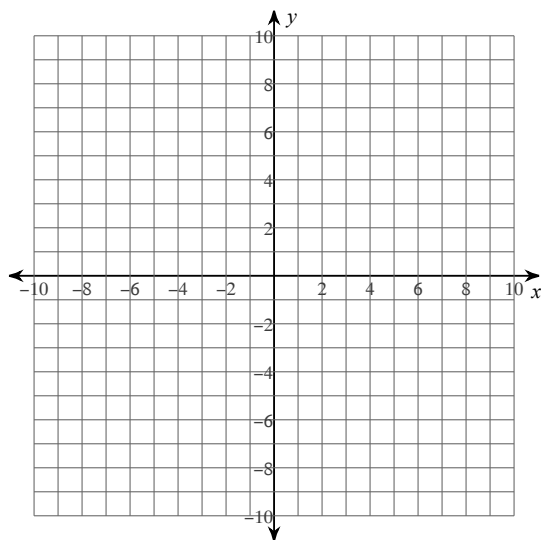
2) $y = x^2 + 4x - 2$
 $y = 6x - 3$



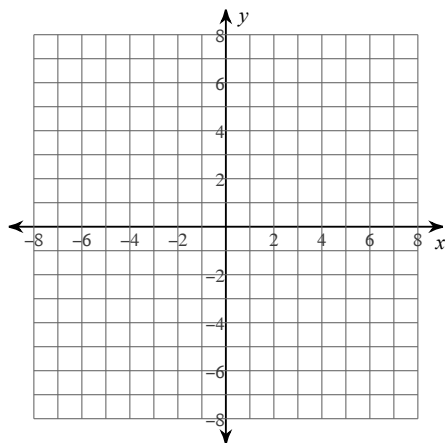
3) $x^2 + y^2 = 9$
 $y = x - 5$



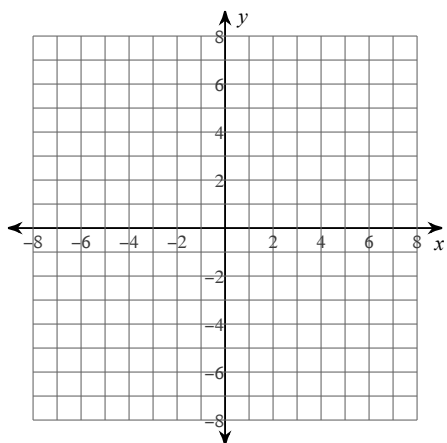
4) $x^2 + y^2 = 25$
 $y = \frac{3}{4}x$



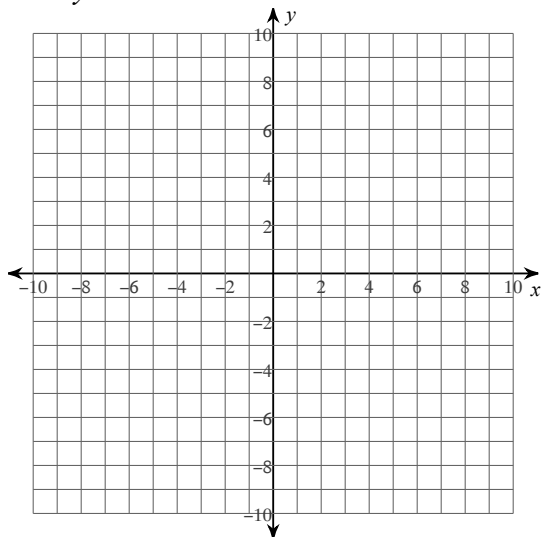
$$5) \begin{aligned} x^2 + (y - 3)^2 &= 4 \\ y &= 2x + 3 \end{aligned}$$



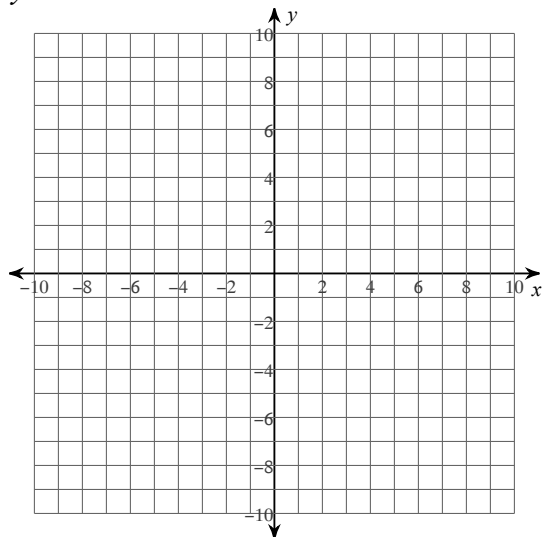
$$6) \begin{aligned} y &= -x^2 - 4x - 2 \\ y &= x - 2 \end{aligned}$$



$$7) \begin{aligned} y &= -x^2 + 1 \\ x^2 + y^2 &= 1 \end{aligned}$$



$$8) \begin{aligned} y &= -2(x + 3)(x - 1) \\ y &= 2x + 6 \end{aligned}$$



9) Sketch three possible systems that have 2 solutions.

10) What is the equation of a circle? Where does it come from?

Identify the center and radius of the circle.

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

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

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

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

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

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

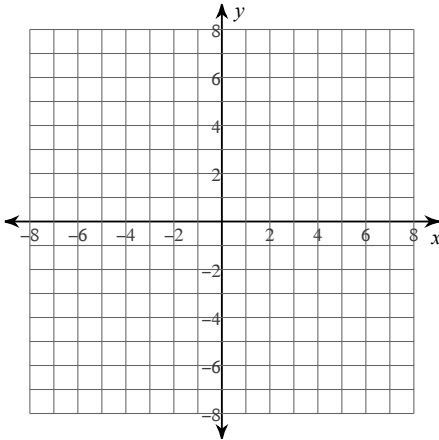
16) Center: $(1, 13)$
Point on Circle: $(2, 10)$

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

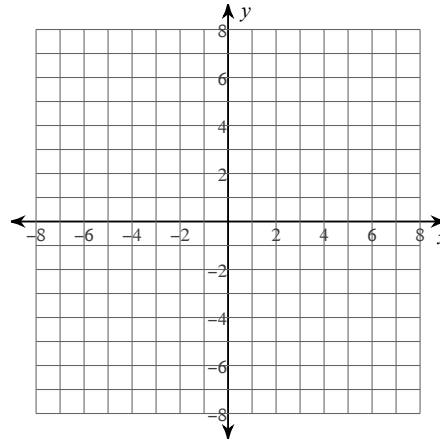
18) Center: $(-7, -16)$
Point on Circle: $(-4, -16)$

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

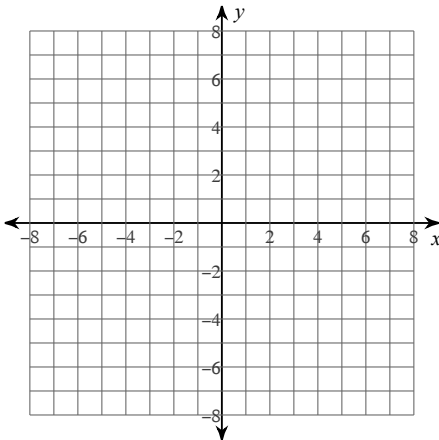
19) $(x + 2)^2 + (y - 2)^2 = 16$



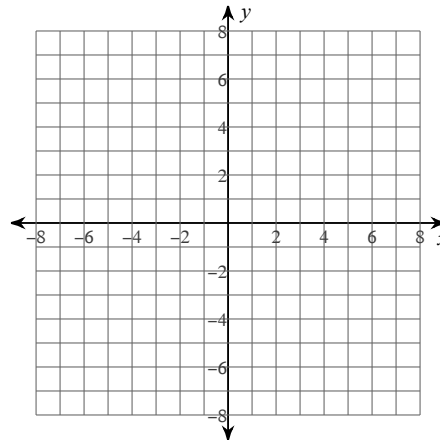
20) $(x - 4)^2 + (y + 3)^2 = 9$



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

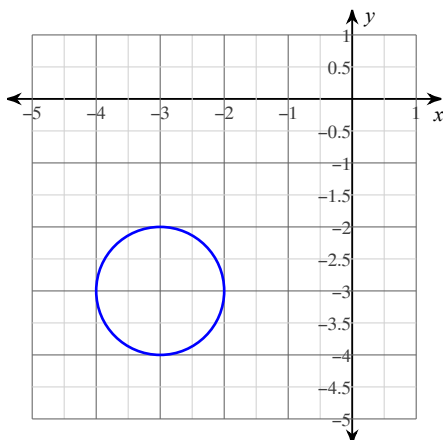


22) $(x + 3)^2 + (y - 1)^2 = 16$

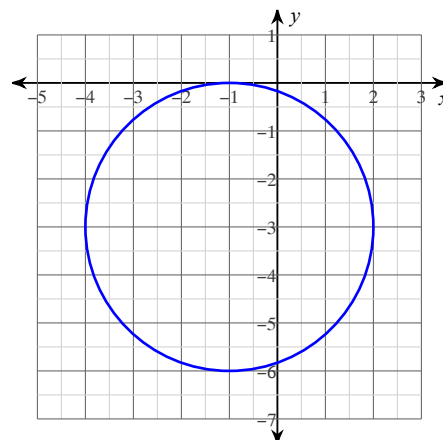


Use the information provided to write the equation of each circle.

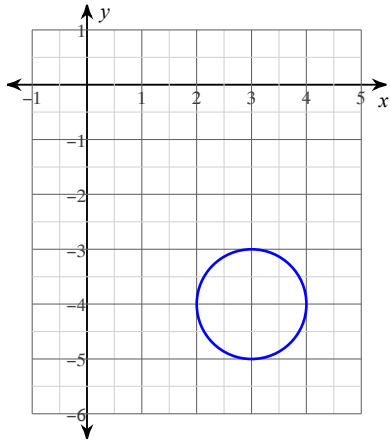
23)



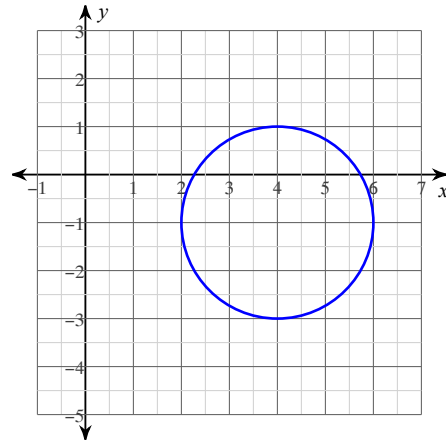
24)



25)



26)



Solve each system algebraically.

$$27) \begin{aligned} y &= x^2 - 5x + 1 \\ y &= x + 1 \end{aligned}$$

$$28) \begin{aligned} y &= x^2 - x - 12 \\ y &= x + 3 \end{aligned}$$

$$29) \begin{aligned} x^2 + (y + 2)^2 &= 16 \\ y &= x + 2 \end{aligned}$$

$$30) \begin{aligned} y &= x^2 + 4x + 3 \\ y &= 2x + 6 \end{aligned}$$

$$31) \begin{cases} (x + 1)^2 + (y - 4)^2 = 3 \\ y = -x \end{cases}$$

$$32) \begin{cases} y = 3x - 2 \\ x^2 - 4y = 8 \end{cases}$$

33) The sum of two numbers is 24. The sum of their squares is 388. Find the value of the two numbers.

34) A rectangle has area of 126 cm^2 and has a length that is 5cm longer than the width:

a. Write a systems of equations to represent this rectangle.

b. Solve your system for the length and the width.

35) The perimeter of a rectangle is 52 cm. The area of the rectangle is 160 cm^2 .

a. Write a system of equations to represent the rectangle.

b. Solve your system for the dimensions of the length and width.