Lesson 13.2 ~ The Equation for a Circle

The Standard Form of the Equation of a Circle

1) The standard form of the equation of a circle centered at (h, k) and a radius of length r is...

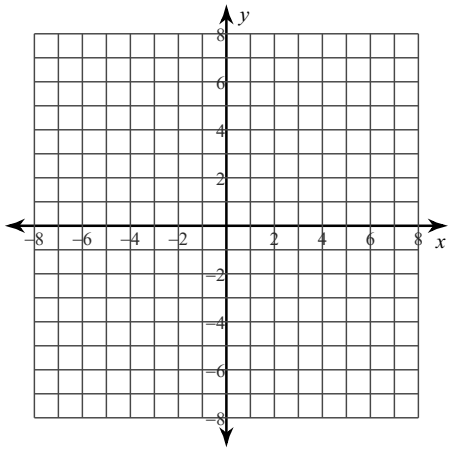
Write the standard form equation of the circle with the given center and radius.

2) Center: $(7, -1)$
Radius: 6

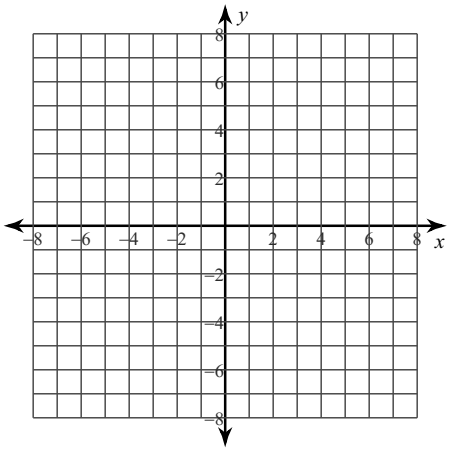
3) Center: $(1, 14)$
Radius: $3\sqrt{2}$

Given the standard form of the equation of a circle, identify the center and radius and then sketch the graph.

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



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



Write the standard form equation of the circle described.

6) Center: $(-5, 14)$
Point on Circle: $(-4, 10)$

Find the center and the radius of the circle described. Then write the standard form equation of the circle.

7) Ends of a diameter: $(3, -3)$ and $(-11, 15)$

BONUS: Complete the square (twice) to transform the equation of a circle in general form $Ax^2 + Cy^2 + Dx + Ey + F = 0$ into standard form. Then identify its center and its radius.

8) $x^2 + y^2 - 20x + 8y + 100 = 0$

9) $x^2 + y^2 - 22x - 12y + 148 = 0$

10) $x^2 + y^2 - 14x + 13 = 0$

11) $x^2 + y^2 - 6x - 12y + 20 = 0$

Lesson 13.2 ~ The Equation for a Circle

The Standard Form of the Equation of a Circle

1) The standard form of the equation of a circle centered at (h, k) and a radius of length r is...

Write the standard form equation of the circle with the given center and radius.

2) Center: $(7, -1)$
Radius: 6

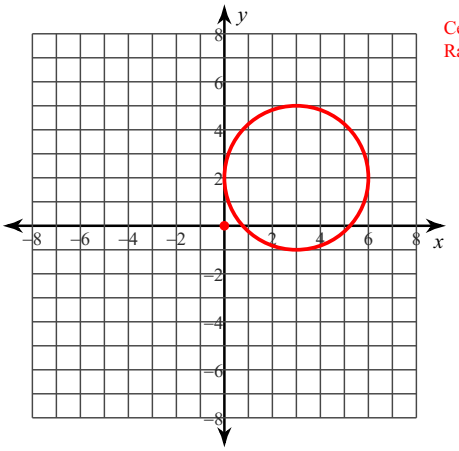
$(x-7)^2+(y+1)^2=36$

3) Center: $(1, 14)$
Radius: $3\sqrt{2}$

$(x-1)^2+(y-14)^2=18$

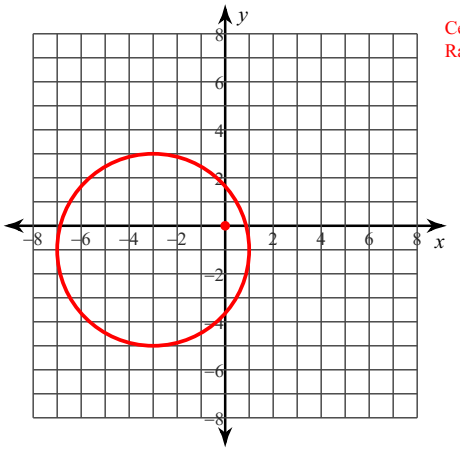
Given the standard form of the equation of a circle, identify the center and radius and then sketch the graph.

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



Center: $(3, 2)$
Radius: 3

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



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

Write the standard form equation of the circle described.

6) Center: $(-5, 14)$
Point on Circle: $(-4, 10)$

$(x+5)^2+(y-14)^2=17$

Find the center and the radius of the circle described. Then write the standard form equation of the circle.

7) Ends of a diameter: $(3, -3)$ and $(-11, 15)$

$(x + 4)^2 + (y - 6)^2 = 130$

BONUS: Complete the square (twice) to transform the equation of a circle in general form $Ax^2 + Cy^2 + Dx + Ey + F = 0$ into standard form. Then identify its center and its radius.

8) $x^2 + y^2 - 20x + 8y + 100 = 0$

$(x - 10)^2 + (y + 4)^2 = 16$

9) $x^2 + y^2 - 22x - 12y + 148 = 0$

$(x - 11)^2 + (y - 6)^2 = 9$

10) $x^2 + y^2 - 14x + 13 = 0$

$(x - 7)^2 + y^2 = 36$

11) $x^2 + y^2 - 6x - 12y + 20 = 0$

$(x - 3)^2 + (y - 6)^2 = 25$