

# Equations of Circles Practice P.3

1. Find the radius and center for  $(x - 5)^2 + (y - 2)^2 = 20$ .

$$C(5, 2) \quad r = \sqrt{20} = 2\sqrt{5}$$

2. Write the equation of a circle given the center is  $(2, -5)$  with a radius of 7.

$$(x - 2)^2 + (y + 5)^2 = 49$$

3. Find the center and radius for  $x^2 + y^2 - 16x + 18y = 47$ .

$$(x - 8)^2 + (y + 9)^2 = 192$$

Write the equation of the circle that satisfies each set of conditions.

4. Center  $(0, 3)$ ,  
radius = 7 units

$$x^2 + (y - 3)^2 = 49$$

5. Center  $(-8, 7)$ ,  
radius =  $\frac{1}{2}$  units

$$(x + 8)^2 + (y - 7)^2 = \frac{1}{4}$$

6. Center  $(-1, -5)$ ,  
radius = 2 units.

$$(x + 1)^2 + (y + 5)^2 = 4$$

Find the center and radius of the circle with the given equation.

7.  $x^2 + (y + 2)^2 = 4$

$$(0, -2) \\ r = 2$$

8.  $x^2 + y^2 = 144$

$$(0, 0) \\ r = 12$$

9.  $(x - 3)^2 + (y - 1)^2 = 25$

$$(3, 1) \\ r = 5$$

10.  $(x + 3)^2 + (y + 7)^2 = 81$

$$(-3, -7) \\ r = 9$$

11.  $(x - 3)^2 + y^2 = 16$

$$(3, 0) \\ r = 4$$

12.  $x^2 + y^2 + 6y = -50 - 14x$

$$(x + 7)^2 + (y + 3)^2 = 8 \\ (-7, -3) \quad r = \sqrt{8} \\ = 2\sqrt{2}$$

13.  $x^2 + y^2 + 2x - 10 = 0$

$$(x + 1)^2 + y^2 = 11 \\ (-1, 0) \quad r = \sqrt{11}$$

14.  $x^2 + y^2 - 18x - 18y + 53 = 0$

$$(x - 9)^2 + (y - 9)^2 = 109 \\ (9, 9) \\ r = \sqrt{109}$$

15.  $x^2 + y^2 + 2x + 4y = 9$

$$(x + 1)^2 + (y + 2)^2 = 14 \\ (-1, -2) \\ r = \sqrt{14}$$