10. Find the distance between the points named. Give all answers in simplest

**a.** (0, 0) and (5, -3) **b.** (3, -2) and (-5, -2) **c.** (4, 4) and (-3, -3)

11. Find the center and the radius of each circle.

**a.**  $(x-2)^2 + y^2 = 1$ 

**b.**  $(x + 2)^2 + (y - 8)^2 = 16$ 

c.  $x^2 + (y + 5)^2 = 112$ 

- **d.**  $(x + 3)^2 + (y + 7)^2 = 14$
- 12. Find an equation of the circle that has the given center and radius.

a. Center (2, 5); radius 3

- **b.** Center (-2, 0); radius 5
- c. Center (-2, 3); radius 10 **d.** Center (i, k); radius n

## **Written Exercises**

Find the distance between the two points. If necessary, you may draw graphs but you shouldn't need to use the distance formula.

**A** 1. (-2, -3) and (-2, 4)

2. (3, 3) and (-2, 3)

3. (3, -4) and (-1, -4)

**4.** (0, 0) and (3, 4)

Use the distance formula to find the distance between the two points.

5. 
$$(-6, -2)$$
 and  $(-7, -5)$ 

6. 
$$(3, 2)$$
 and  $(5, -2)$ 

7. 
$$(-8, 6)$$
 and  $(0, 0)$ 

8. 
$$(12, -1)$$
 and  $(0, -6)$ 

Find the distance between the points named. Use any method you choose.

9. 
$$(5, 4)$$
 and  $(1, -2)$ 

10. 
$$(-2, -2)$$
 and  $(5, 7)$ 

11. 
$$(-2, 3)$$
 and  $(3, -2)$ 

12. 
$$(-4, -1)$$
 and  $(-4, 3)$ 

Given points A, B, and C. Find AB, BC, and AC. Are A, B, and C collinear? If so, which point lies between the other two?

**13.** 
$$A(0, 3), B(-2, 1), C(3, 6)$$

**14.** 
$$A(5, -5)$$
,  $B(0, 5)$ ,  $C(2, 1)$ 

**15.** 
$$A(-5, 6), B(0, 2), C(3, 0)$$

**16.** 
$$A(3, 4), B(-3, 0), C(-1, 1)$$

Find the center and the radius of each circle.

17. 
$$(x + 3)^2 + y^2 = 49$$

18. 
$$(x + 7)^2 + (y - 8)^2 = \frac{36}{25}$$

19. 
$$(x - j)^2 + (y + 14)^2 = 17$$

**19.** 
$$(x-j)^2 + (y+14)^2 = 17$$
 **20.**  $(x+a)^2 + (y-b)^2 = c^2$ 

Write an equation of the circle that has the given center and radius.

**21.** 
$$C(3, 0)$$
;  $r = 8$ 

**22.** 
$$C(0, 0)$$
;  $r = 6$ 

**23.** 
$$C(-4, -7)$$
;  $r = 5$ 

**24.** 
$$C(-2, 5)$$
;  $r = \frac{1}{3}$ 

**25.** Sketch the graph of 
$$(x - 3)^2 + (y + 4)^2 = 36$$
.

**26.** Sketch the graph of 
$$(x-2)^2 + (y-5)^2 \le 9$$
.