10. Find the distance between the points named. Give all answers in simplest form.
    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 (j, 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. $(x - j)^2 + (y + 14)^2 = 17$
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 $(x - 2)^2 + (y - 5)^2 \leq 9$.