

LESSON
8.1**Practice B**

For use with the lesson "Apply the Distance and Midpoint Formulas"

Find the distance between the two points. Then find the midpoint of the line segment joining the two points.

1. $(5, 2), (4, 3)$

2. $(2.4, 1.2), (1.2, 4.6)$

3. $\left(\frac{2}{3}, -\frac{3}{2}\right), \left(4, \frac{3}{2}\right)$

The vertices of a triangle are given. Classify the triangle as *scalene*, *isosceles*, or *equilateral*.

4. $(2, 7), (4, 4), (-1, -1)$

5. $(-2, 5), (-1, -4), (7, 4)$

Write an equation for the perpendicular bisector of the line segment joining the two points.

6. $(3, 5), (1, 7)$

7. $(-2, 1), (-4, -5)$

Use the given distance d between the two points to find the value of x or y .

8. $(3, 6), (7, y); d = 4\sqrt{2}$

9. $(-2, -7), (x, -12); d = \sqrt{89}$

Tell whether the parabola opens *up*, *down*, *left*, or *right*.

10. $x^2 = -4y$

11. $y^2 = 7x$

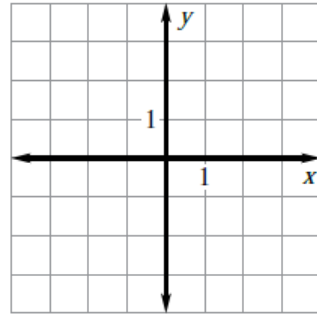
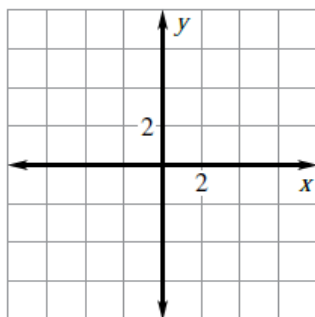
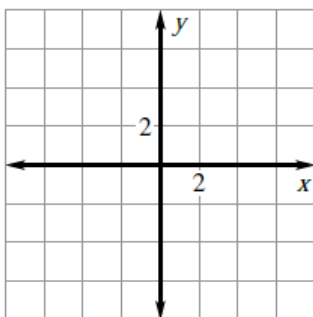
12. $y^2 = -2x$

Graph the equation. Identify the focus and directrix of the parabola.

13. $x^2 = 12y$

14. $y^2 = -4x$

15. $y^2 - 6x = 0$

**Write the standard form of the equation of the parabola with the given focus and vertex at $(0, 0)$.**

16. $(2, 0)$

17. $(0, 1)$

18. $(0, -6)$

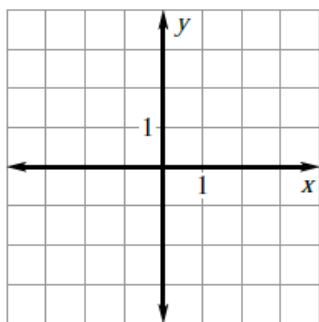
Write the standard form of the equation of the parabola with the given directrix and vertex at (0, 0).

19. $y = 4$

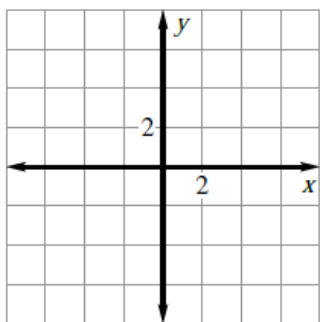
20. $x = \frac{1}{4}$

Graph the equation. Identify the radius of the circle.

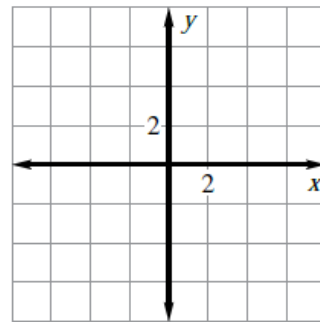
21. $x^2 + y^2 = 9$



22. $x^2 + y^2 = 20$



23. $5x^2 + 5y^2 = 80$



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

24. $\sqrt{7}$

25. $2\sqrt{5}$

26. $3\sqrt{10}$

Write the standard form of the equation of the circle that passes through the given point and whose center is the origin.

27. (2, 3)

28. (-3, 5)

29. (4, -6)

Write an equation of the line tangent to the given circle at the given point.

30. $x^2 + y^2 = 17$; (1, 4)

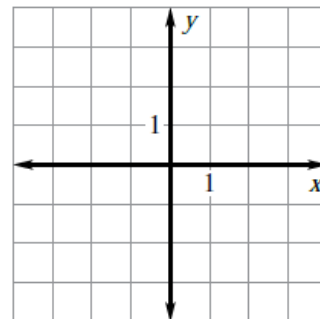
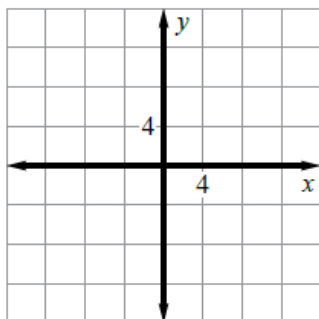
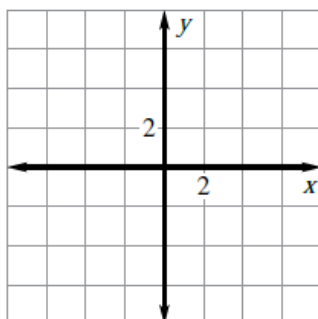
31. $x^2 + y^2 = 52$; (-4, 6)

Graph the equation. Identify the vertices, co-vertices, and foci of the ellipse.

32. $\frac{x^2}{16} + \frac{y^2}{36} = 1$

33. $\frac{x^2}{64} + \frac{y^2}{100} = 1$

34. $9x^2 + 4y^2 = 36$



Write an equation of the ellipse with the given characteristics and center at (0, 0).

35. Vertex: (3, 0)
Co-vertex: (0, 2)

36. Vertex: (-7, 0)
Focus: $(2\sqrt{6}, 0)$

37. Co-vertex: (0, 6)
Focus: $(-2\sqrt{7}, 0)$