GUIDED PRACTICE for Example 3

9. MICROWAVES A parabolic microwave antenna is 16 feet in diameter. Find an equation for the cross section of the antenna with its vertex at the origin and its focus 10 feet to the right of its vertex. Then find the antenna's depth.

9.2 EXERCISES

HOMEWORK KEY

○ = **WORKED-OUT SOLUTIONS** on p. WS1 for Exs. 15, 27, and 57

= **TAKS PRACTICE AND REASONING** Exs. 25, 38, 51, 59, 61, and 62

SKILL PRACTICE

1. VOCABULARY Copy and complete: A parabola is the set of all points in a plane equidistant from a point called the ? and a line called the ?.

2. WRITING *Compare* the graphs of $x^2 = 4py$ and $y^2 = 4px$.

EXAMPLE 1 on p. 621 for Exs. 3–25

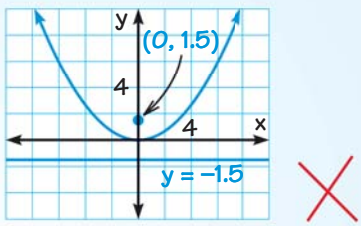
GRAPHING **Graph the equation. Identify the focus, directrix, and axis of symmetry of the parabola.**

3. $y^2 = 16x$	**4.** $x^2 = -6y$	**5.** $x^2 = 20y$	**6.** $y^2 = 28x$
7. $y^2 = -10x$	**8.** $x^2 = 30y$	**9.** $y^2 = -2x$	**10.** $x^2 = -36y$
11. $x^2 = 12y$	**12.** $-2y = x^2$	**13.** $x = 4y^2$	**14.** $-x^2 = 48y$
15. $5x^2 = -15y$	**16.** $-y^2 = 18x$	**17.** $-24x = 3y^2$	**18.** $14x = 6y^2$
19. $\frac{1}{8}x^2 - y = 0$	**20.** $4x - 11y^2 = 0$	**21.** $5x^2 + 12y = 0$	**22.** $-5x + \frac{1}{3}y^2 = 0$

ERROR ANALYSIS ***Describe*** **and correct the error in graphing the parabola.**

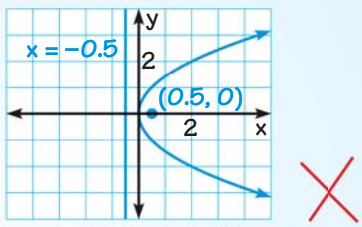
23.

$-6x + y^2 = 0$



24.

$0.5y^2 + x = 0$



25. **TAKS REASONING** What is the directrix of the parabola $15y + 3x^2 = 0$?

Ⓐ $x = -5$ Ⓑ $x = -1.25$ Ⓒ $y = -1.25$ Ⓓ $y = 1.25$

EXAMPLE 2 on p. 621 for Exs. 26–50

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

26. (2, 0)	**27.** (−5, 0)	**28.** (3, 0)	**29.** (0, −4)
30. (0, 8)	**31.** (0, −10)	**32.** (0, −6)	**33.** (−9, 0)
34. $\left(0, \frac{7}{4}\right)$	**35.** $\left(0, -\frac{3}{8}\right)$	**36.** $\left(\frac{5}{2}, 0\right)$	**37.** $\left(-\frac{9}{16}, 0\right)$