

GUIDED PRACTICE

1. **Vocabulary** Describe the relationship between a parabola and its *directrix*.

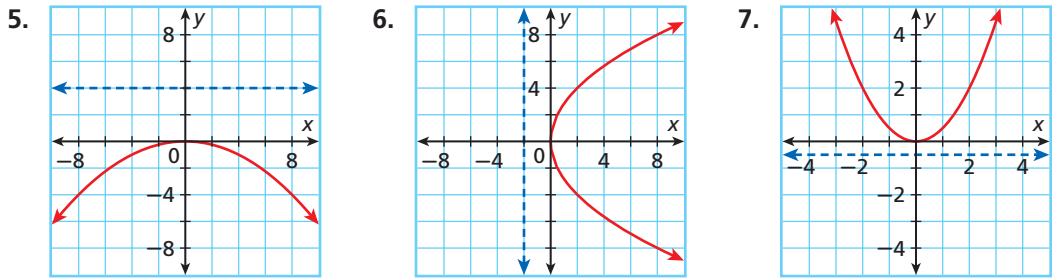
SEE EXAMPLE 1
p. 751

Use the distance formula to find the equation of a parabola with the given focus and directrix.

2. $F(0, -5), y = 5$ 3. $F(7, 0), x = -7$ 4. $F(-3, 0), x = 6$

SEE EXAMPLE 2
p. 752

Write the equation in standard form for each parabola.



8. vertex $(0, 0)$, focus $(0, 1)$ 9. vertex $(0, 0)$, focus $(-8, 0)$

SEE EXAMPLE 3
p. 753

Find the vertex, value of p , axis of symmetry, focus, and directrix of each parabola, and then graph.

10. $y = \frac{1}{32}(x + 2)^2$ 11. $x = \frac{1}{24}(y - 4)^2$ 12. $y + 1 = \frac{1}{16}(x - 2)^2$

SEE EXAMPLE 4
p. 754

13. **Communications** The equation for the cross section of a parabolic satellite TV dish is $y = \frac{1}{38}x^2$, measured in inches. How far is the focus from the vertex of the cross section?

PRACTICE AND PROBLEM SOLVING

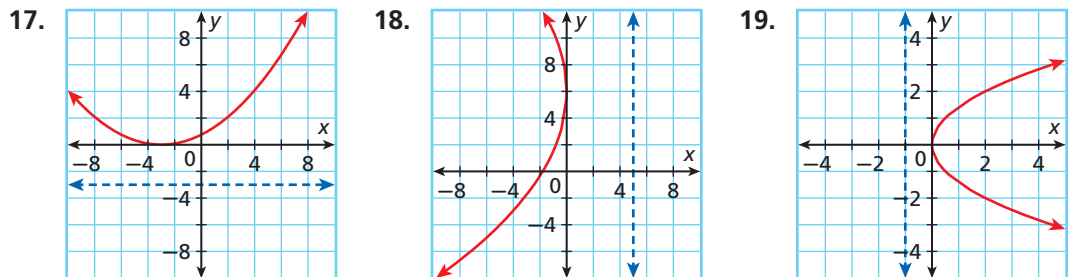
Independent Practice	
For Exercises	See Example
14–16	1
17–21	2
22–24	3
25	4

Extra Practice
Skills Practice p. S23
Application Practice p. S41

Use the distance formula to find the equation of a parabola with the given focus and directrix.

14. $F(0, 3), y = -5$ 15. $F(-2, 0), x = 8$ 16. $F(7, 0), x = -1$

Write the equation in standard form for each parabola.



20. vertex $(0, 0)$, focus $(\frac{1}{2}, 0)$ 21. vertex $(0, 0)$, focus $(0, -6)$

Find the vertex, value of p , axis of symmetry, focus, and directrix of each parabola, and then graph.

22. $y = \frac{1}{8}(x - 1)^2$ 23. $x = 2y^2 + 1$ 24. $x - 2 = \frac{1}{2}(y + 1)^2$