and its focus is at $(0, a)$. Since $(4, 3)$ is a point on the graph, we have

$$4^2 = 4a(3) \quad x^2 = 4ay;\ x = 4,\ y = 3$$

$$a = \frac{4}{3} \quad \text{Solve for } a.$$

The receiver should be located $1\frac{1}{3}$ feet (1 foot, 4 inches) from the base of the dish, along its axis of symmetry.

Now Work PROBLEM 63

10.2 Assess Your Understanding

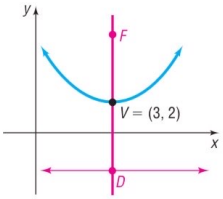
'Are You Prepared?' *Answers are given at the end of these exercises. If you get a wrong answer, read the pages listed in red.*

1. The formula for the distance d from $P_1 = (x_1, y_1)$ to $P_2 = (x_2, y_2)$ is $d =$ _____. (p. 3)
2. To complete the square of $x^2 - 4x$, add _____. (pp. A29–A30)
3. Use the Square Root Method to find the real solutions of $(x + 4)^2 = 9$. (p. A48)
4. The point that is symmetric with respect to the x-axis to the point $(-2, 5)$ is _____. (pp. 12–14)
5. To graph $y = (x - 3)^2 + 1$, shift the graph of $y = x^2$ to the right _____ units and then _____ 1 unit. (pp. 90–99)

Concepts and Vocabulary

6. A(n) _____ is the collection of all points in the plane such that the distance from each point to a fixed point equals its distance to a fixed line.

Answer Problems 7–10 using the figure.

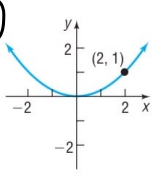


7. If $a > 0$, the equation of the parabola is of the form
   (a) $(y - k)^2 = 4a(x - h)$
   (b) $(y - k)^2 = -4a(x - h)$
   (c) $(x - h)^2 = 4a(y - k)$
   (d) $(x - h)^2 = -4a(y - k)$
8. The coordinates of the vertex are _____.
9. If $a = 4$, then the coordinates of the focus are _____.
10. If $a = 4$, then the equation of the directrix is _____.

Skill Building

In Problems 11–18, the graph of a parabola is given. Match each graph to its equation.

(A) $y^2 = 4x$
(B) $x^2 = 4y$
(C) $y^2 = -4x$
(D) $x^2 = -4y$
(E) $(y - 1)^2 = 4(x - 1)$
(F) $(x + 1)^2 = 4(y + 1)$
(G) $(y - 1)^2 = -4(x - 1)$
(H) $(x + 1)^2 = -4(y + 1)$

11.


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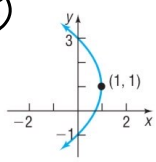

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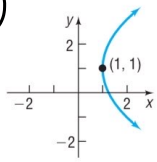

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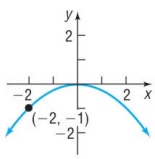

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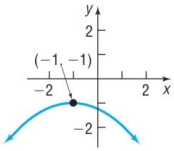

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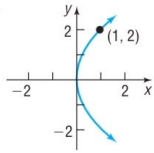

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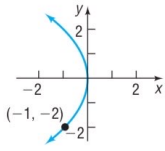

18.