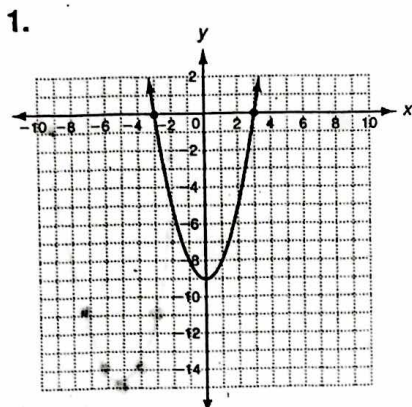
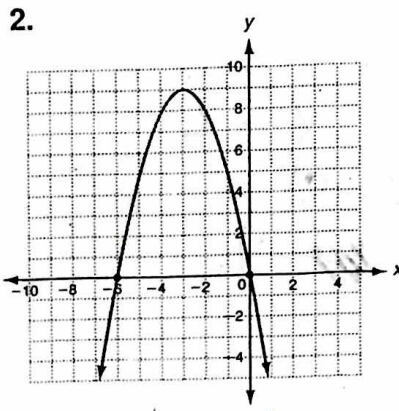


**LESSON 9-2 Practice C**  
**Characteristics of Quadratic Functions**

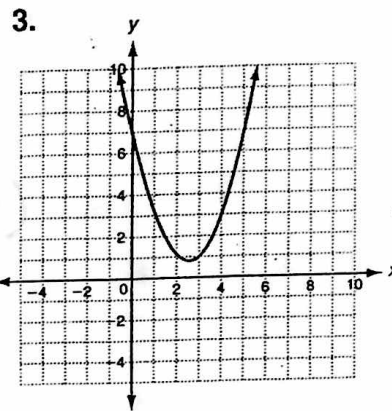
Find the zeros of each quadratic function from its graph.



$x = -3 \text{ \& } 3$

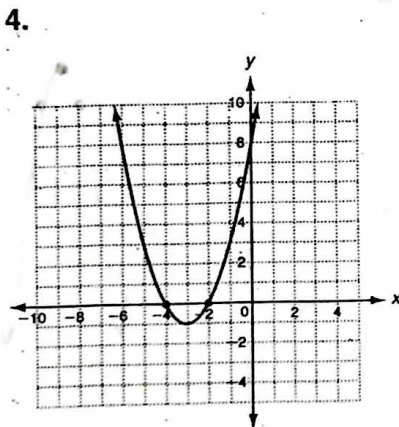


$x = -6 \text{ \& } 0$

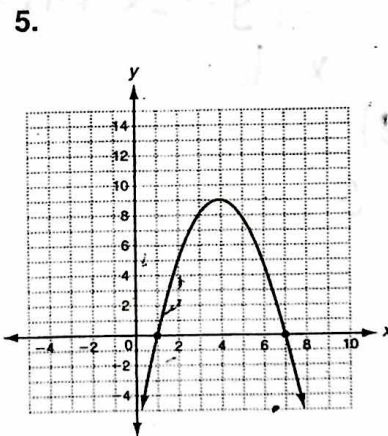


None

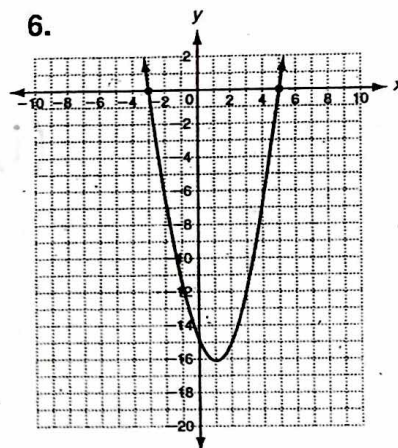
Find the axis of symmetry of each parabola.



$x = -3$



$x = 4$



$x = 1$

For each quadratic function, find the axis of symmetry of its graph.

7.  $y = -2x^2 + \frac{1}{2}x + 8$

$x = \frac{1}{8}$

8.  $y = 0.4x^2 + 0.6x + 10$

$x = -0.75$

9.  $y = \frac{1}{3}x^2 + \frac{1}{4}x$

$x = -\frac{3}{8}$

Find the vertex of each parabola.

10.  $y = 4x^2 - 8x + 1$

$(1, -3)$

11.  $y = -2x^2 - 8x + 7$

$(-2, 15)$

12.  $y = 6x^2 + 18x + 5$

$(-\frac{3}{2}, \frac{-17}{2})$

**LESSON 9-3** **Practice B**  
**Graphing Quadratic Functions**

Graph each quadratic function.

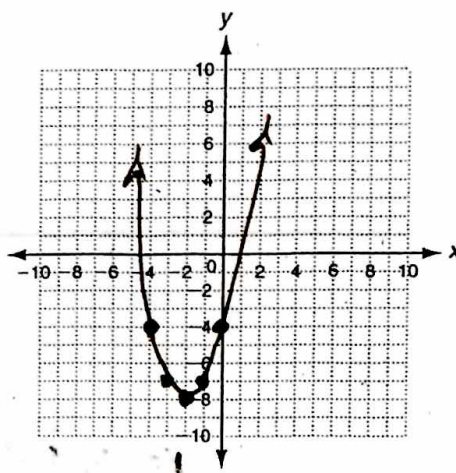
1.  $y = x^2 + 4x - 4$

axis of symmetry:  $x = -2$

vertex:  $(-2, -8)$

y-intercept: ~~0~~ -4

two other points: \_\_\_\_\_



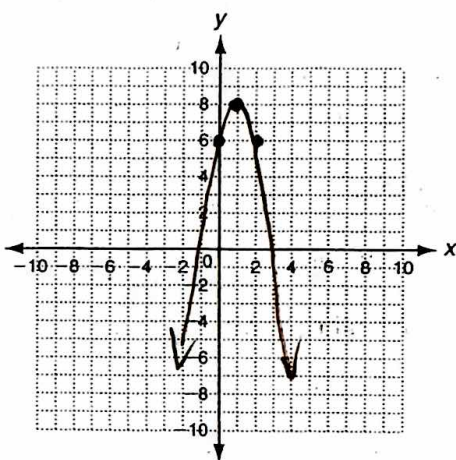
2.  $y + 2x^2 - 4x - 6 = 0 \Rightarrow y = -2x^2 + 4x + 6$

axis of symmetry:  $x = 1$

vertex:  $(1, 8)$

y-intercept: 6

two other points: \_\_\_\_\_



3. The height in feet of a soccer ball that is kicked can be modeled by the function  $f(x) = -8x^2 + 24x$ , where  $x$  is the time in seconds after it is kicked. Find the soccer ball's maximum height and the time it takes the ball to reach this height. Then find how long the soccer ball is in the air.

maximum height: 18 ft

time to reach maximum height: 1.5 sec

time in the air: 3 sec

$$AoS: x = \frac{-b}{2a} = \frac{-24}{2(-8)} = \frac{-24}{-16} = \underline{\underline{1.5}}$$

$$y = -8(1.5)^2 + 24(1.5) = \underline{\underline{18}}$$

Soccer Kick

