

**Practice 10-2 (part A)****Quadratic Functions**

Find the equation of the axis of symmetry and the coordinates of the vertex of the graph of each function.

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

2.  $y = x^2 + 12x - 9$

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

4.  $y = 3x^2 + 18x + 9$

5.  $y = 3x^2 + 3$

6.  $y = 16x - 4x^2$

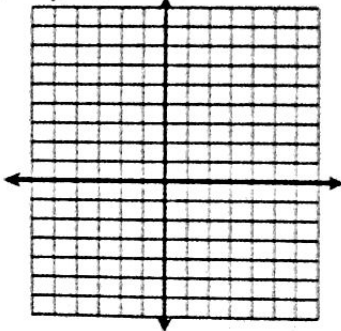
7.  $y = 0.5x^2 + 4x - 2$

8.  $y = -4x^2 + 24x + 6$

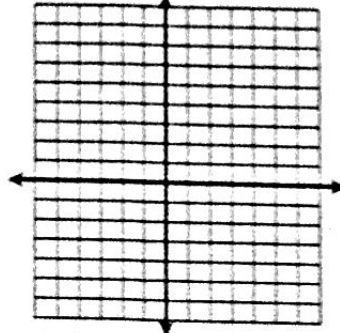
9.  $y = -1.5x^2 + 6x$

Graph each function. Label the axis of symmetry and the vertex.

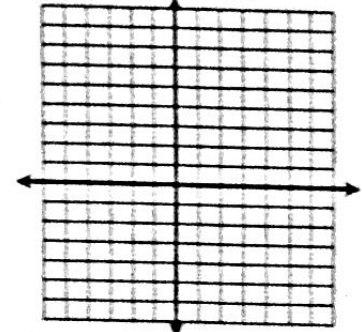
10.  $y = x^2 - 6x + 4$



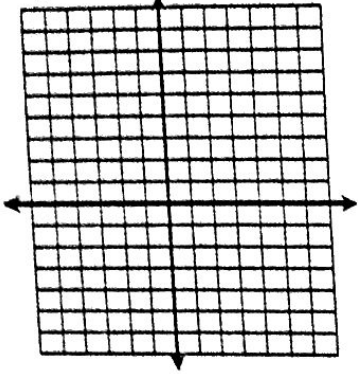
11.  $y = x^2 + 4x - 1$



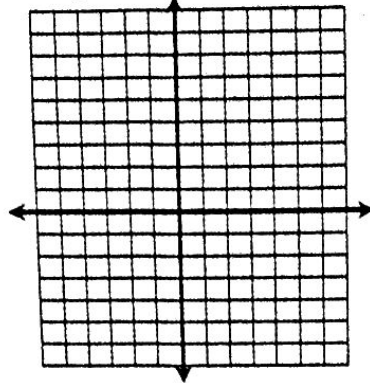
12.  $y = x^2 + 10x + 14$



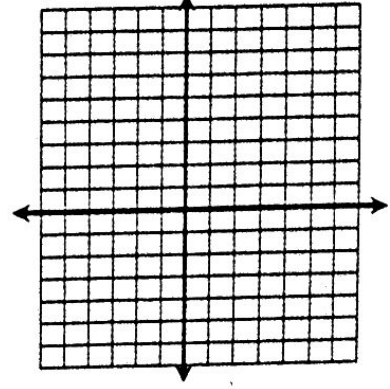
13.  $y = x^2 + 2x + 1$



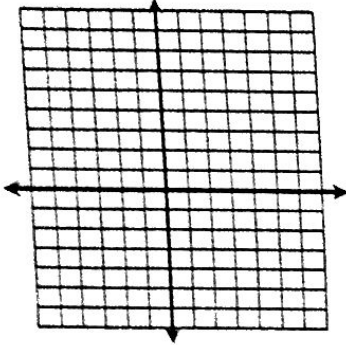
14.  $y = -x^2 - 4x + 4$



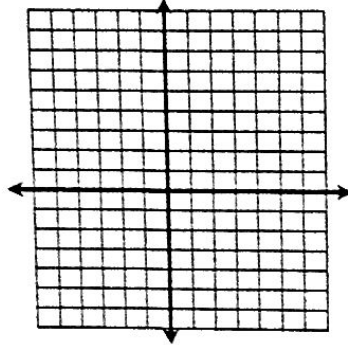
15.  $y = -4x^2 + 24x + 13$



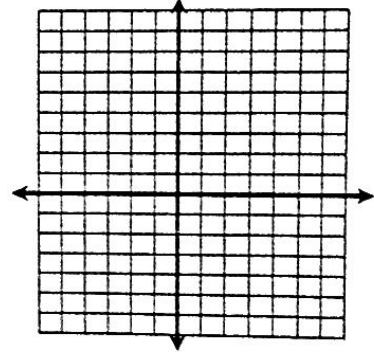
16.  $y = -2x^2 - 8x + 5$



17.  $y = 4x^2 - 16x + 10$



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



19. You and a friend are hiking in the mountains. You want to climb to a ledge that is 20 ft above you. The height of the grappling hook you throw is given by the function  $h = -16t^2 - 32t + 5$ . What is the maximum height of the grappling hook? Can you throw it high enough to reach the ledge?

20. The total profit made by an engineering firm is given by the function  $p = x^2 - 25x + 5000$ . Find the minimum profit made by the company.