PROBLEM SET 5-2 AND 5-3
(Parabolas)

Graph each function. State the vertex and the axis of symmetry:

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

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

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

4. $y = -6x^2 - 12x - 1$

5. $y = 3x^2 - 12x + 10$

6. $y = -4x^2 - 24x - 36$

7. $y = (x-1)^2 + 2$

8. $y = 2(x-2)^2 + 5$

9. $y = -3(x+7)^2 - 8$

10. $y = (x-5)^2 - 3$

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

12. $y = -(x-7)^2 + 10$

Write the equation of each parabola in vertex form:

13. Vertex (1, 2), Point (2, – 5)

14. Vertex (3, 6), *y*-intercept 2

Write each function in standard form:

15. $y = (5x+6)^2 - 9$

16. $y = -(3x-4)^2 + 6$