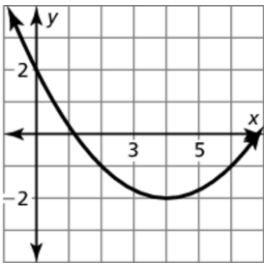
Name_____ Date _____

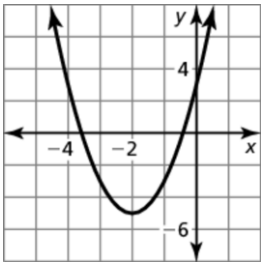
3.3 Practice A

In Exercises 1 and 2, find the vertex, the axis of symmetry, and the *y*-intercept of the graph.

1.



2.



In Exercises 3–6, find (a) the axis of symmetry and (b) the vertex of the graph of the function.

3. $f(x) = 3x^2 - 6x$

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

5. $y = -7x^2 + 14x + 1$

6. $f(x) = -4x^2 + 20x + 15$

In Exercises 7–10, graph the function. Describe the domain and range.

7. $f(x) = 3x^2 - 12x + 6$

8. $y = 5x^2 + 20x - 9$

9. $y = -6x^2 - 12x - 5$

10. $f(x) = -7x^2 + 28x - 8$

11. Describe and correct the error in finding the axis of symmetry of the graph of $y = -2x^2 + 16x + 7$.

$$\times \quad x = -\frac{b}{2a} = -\frac{16}{2(2)} = -4$$

In Exercises 12 and 13, tell whether the function has a minimum value or a maximum value. Then find the value.

12. $f(x) = 5x^2 - 20x + 3$

13. $y = -3x^2 + 12x - 7$

14. The vertex of a parabola is $(2, -2)$. Another point on the parabola is $(5, 7)$. Find another point on the parabola. Justify your answer.