

9.3

NAME _____

DATE _____

Practice B

For use with pages 518–524

Identify the values of a , b , and c in the function.

1. $y = -2x^2$

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

3. $y = 3x^2 + 7x$

4. $y = \frac{1}{2}x^2 - 2x - \frac{1}{4}$

5. $y = -4.5x^2 + 4$

6. $y = 1.7x^2 + 2.3x + 1.1$

Tell whether the graph opens up or down. Find the coordinates of the vertex. Write an equation of the axis of symmetry.

7. $y = 3x^2$

8. $y = -3x^2 + 8x$

9. $y = -4x^2 - 4x + 8$

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

11. $y = 3x^2 - 12x - 2$

12. $y = 2x^2 + 3x + 6$

13. $y = 2x^2 + 7x - 21$

14. $y = -\frac{1}{4}x^2 - 16$

15. $y = -6x^2 + 14x$

Find the coordinates of the vertex. Make a table of values using x -values to the left and right of the vertex.

16. $y = -x^2 - 2x + 15$

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

x					
y					

x					
y					

Sketch the graph of the function. Label the vertex.

18. $y = -x^2$

19. $y = -x^2 - 6x$

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

21. $y = x^2 - 4$

22. $y = -3x^2 + 6x + 2$

23. $y = x^2 + 4x + 7$

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

25. $y = -x^2 + x - \frac{1}{3}$

26. $y = \frac{1}{2}x^2 - 4x + 1$

Lesson 9.3

Throwing a Ball In Exercises 27 and 28, use the following information.

The path of a ball thrown into the air from a height of 3 feet is given by $y = -\frac{1}{8}x^2 + x + 3$, where y is the height of the ball in feet at the horizontal distance of x feet from the thrower.

27. How high is the ball at its maximum height?

28. Make a table and estimate the horizontal distance the ball traveled before hitting the ground.

29. **Minimum Cost** A manufacturer has daily production costs of

$$C = 10,000 - 10x + 0.045x^2$$

where C is the total cost in dollars and x is the number of units produced. How many units should be produced each day to yield a minimum cost?

