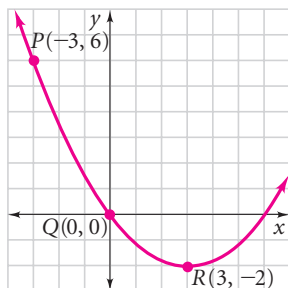


Differentiated Instruction Resources

- **L3** Ch. 5 Test
- **L2** Adapted Ch. 5 Test
- **L4** Ch. 5 Alternative Assessment
- **L3** Spanish Ch. 5 Test
- **L4** Spanish Ch. 5 Alternative Assessment
- ExamView CD-ROM
 - Ch. 5 Pre-Made Test
 - Make your own Ch. 5 test
- Online Chapter 5 Test at www.PHSchool.com

1. Write the equation of the parabola in standard form. Find the coordinates of the points corresponding to P , Q , and R . **See margin.**



Sketch a graph of the parabola with the given vertex through the given point. **2–3. See back of book.**

2. vertex $(0, 0)$, point $(-3, 3)$

3. vertex $(1, 5)$, point $(2, 11)$

4–7. See back of book for graphs.
Graph each quadratic function. Identify the axis of symmetry and the coordinates of the vertex.

4. $y = x^2 - 7$ $x = 0, (0, -7)$

5. $y = x^2 + 2x + 6$ $x = -1, (-1, 5)$

6. $y = -x^2 + 5x - 3$ $x = 2.5, (2.5, 3.25)$

7. $y = -\frac{1}{2}x^2 - 8$ $x = 0, (0, -8)$

Simplify each expression.

8. $\sqrt{-16}$ $4i$

9. $4\sqrt{-9} - 2$ $-2 + 12i$

10. $(4 - i) + (5 - 9i)$ $9 - 10i$

11. $(2 + 3i)(8 - 5i)$ $31 + 14i$

12. $(-3 + 2i) - (6 + i)$ $-9 + i$

13. $(7 - 4i)(10 - 2i)$ $62 - 54i$

14. **Physics** For a model rocket, the altitude h , in meters, as a function of time t , in seconds, is given by $h = 68t - 8t^2$. Find the maximum height of the rocket. How long does it take to reach the maximum height? $h = 144.5$ m; $t = 4.25$ s

Find the additive inverse of each number.

15. $3 - 7i$ $-3 + 7i$

16. $-2 + i$ $2 - i$

Graph each number on the complex plane. Then find its absolute value. **17–22. See back of book.**

17. $7 - 2i$

18. $8i$

19. $4 + 8i$

20. 5

21. $6 - 4i$

22. $-2 + 3i$

23. **Writing** Compare graphing a number on the complex plane to graphing a point on the coordinate plane. How are they similar? How are they different? **See margin.**

Solve each quadratic equation. **24–32. See margin.**

24. $x^2 - 25 = 0$

25. $x^2 + 5x - 24 = 0$

26. $x^2 + 8x - 9 = 0$

27. $3x^2 - 21x + 3 = 0$

28. $6x^2 = 9x$

29. $4x^2 + 4x + 4 = 0$

30. $5x^2 + x + 2 = 0$

31. $-3x^2 - 2x + 7 = 0$

32. $2x^2 + 6x + 12 = 0$

Write each function in vertex form. Sketch the graph of the function and label its vertex. **33–36. See back of book.**

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

34. $y = -x^2 + 8x - 10$

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

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

Evaluate the discriminant of each equation. How many real and imaginary solutions does each have?

37. $x^2 + 6x - 7 = 0$ **64; 2 real solutions**

38. $3x^2 - x + 3 = 0$ **-35; 2 imaginary solutions**

39. $-2x^2 - 4x + 1 = 0$ **24; 2 real solutions**

40. $-x^2 + 6x - 9 = 0$ **0; 1 real solution**

41. **Open-Ended** Sketch the graph of a quadratic function $f(x) = ax^2 + bx + c$ whose related quadratic equation $ax^2 + bx + c = 0$ has no real solutions. **Check students' work.**

Adapted Chapter Test **L2**

Chapter Test **L3**

Chapter Test
Chapter 5

1. Write the equation of the parabola in standard form. Find the coordinates of points corresponding to P and Q .

Sketch a graph of the parabola with the given vertex through the given point.

2. vertex $(1, 4)$; point $(5, 8)$ 3. vertex $(-3, -2)$; point $(1, 2)$

Graph each quadratic function. Identify the axis of symmetry and the coordinates of the vertex.

4. $y = x^2 + 5$ 5. $y = x^2 - 4x - 3$
6. $y = -x^2 + 7x - 2$ 7. $y = \frac{1}{2}x^2 - 6$

8. **Open-Ended** Write a complex number with an absolute value between 7 and 8.

Simplify each expression.

9. $(3 + 9) - (7 + 4)$ 10. $(3 - 4)(5 + 2)$
11. $(-4 - 9) + (5 - 7)$ 12. $3\sqrt{25} + 4$
13. $(\sqrt{16} - 2)(\sqrt{4} + 1)$ 14. $(5 + 4) - (4 - 3)$

Find the additive inverse of each number.

15. $-2 - 3i$ 16. $1 + 4i$
17. $5 - 3i$ 18. $-7 + 2i$

Find the absolute value of each complex number.

19. $7i$ 20. 12 21. $-3 - 2i$

22. **Writing** Explain how to find the absolute value of any complex number.

Algebra 2 Chapter 5

1. $y = \frac{2}{9}x^2 - \frac{4}{3}x$; $(9, 6)$, $(6, 0)$, $(3, -2)$

23. **Answers may vary.**
Sample: In the coordinate plane you graph ordered pairs (a, b) ; in the complex plane you graph complex numbers $a + bi$. For both,

you find a on the horizontal axis and you find b on the vertical axis.

24. $-5, 5$

25. $-8, 3$

26. $-9, 1$

27. $\frac{7 - 3\sqrt{5}}{2}, \frac{7 + 3\sqrt{5}}{2}$

28. $0, \frac{3}{2}$

29. $-\frac{1}{2} - \frac{i\sqrt{3}}{2}, -\frac{1}{2} + \frac{i\sqrt{3}}{2}$