



# Working with Quadratics

Let's explore terms in a quadratic equation.

## 16.1 Order of Operations and Roots

Find the value of these expressions.

1.  $\frac{\sqrt{16}}{2}$

2.  $(\sqrt{25})^2 + 6.2$

3.  $\sqrt{4^2 + 3^2}$



16.2

Finding Coefficients

Rewrite the equation in standard form  $ax^2 + bx + c = 0$ , then find the values of  $a$ ,  $b$ , and  $c$ . Finally, compute  $b^2 - 4ac$ .

|                                 | $ax^2 + bx + c = 0$ | $a$ | $b$ | $c$ | $b^2 - 4ac$ |
|---------------------------------|---------------------|-----|-----|-----|-------------|
| $x^2 - 3x + 5 = 0$              |                     |     |     |     |             |
| $3x^2 - 4 = -x$                 |                     |     |     |     |             |
| $3x^2 + 5x = 9 - 4x$            |                     |     |     |     |             |
| $\frac{2x^2}{3} + 6x - 13 = 13$ |                     |     |     |     |             |
| $(x + 2)(x - 3) = 0$            |                     |     |     |     |             |



**16.3**

## Practicing Methods for Solving Quadratic Equations

Solve each of these quadratic equations. Explain or show your reasoning for the method you choose to use.

1.  $x^2 - 3x - 4 = 0$

2.  $x^2 + x = 6$

3.  $x^2 + 6x + 7 = 5$

4.  $x^2 + 12 = 7x$

5.  $x^2 + 3x - 5 = 0$

