Lesson 16: 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. $\sqrt{9} + 2$
2. $\frac{\sqrt{16}}{2}$
3. $(\sqrt{25})^2 + 6.2)$
4. $(\frac{\sqrt{100}}{4} - \frac{\sqrt{64}}{2})$
5. $\sqrt{1 + 15}$
6. $\sqrt{4^2 + 3^2}$

16.2: Finding Coefficients

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

1. $x^2 - 3x + 5 = 0$
2. $3x^2 - 4 + x = 0$

3. $-2x^2 + 5x = 11$

4. $3x^2 + 5x = 9 - 4x$

5. $\frac{2x^2}{3} + 6x - 13 = 13$

6. $x^2 - 9 = 0$

7. $9 + x - 4x^2 = 1$

8. $(x + 2)(x - 3) = 0$

16.3: Practicing Methods for Solving Quadratic Equations

Solve each of these quadratic equations by either rewriting the expression in factored form or completing the square. 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. $x^2 + 3x - 5 = 0$