

Chapter 8: **Four Strategies for Solving Quadratic Equations**

Objectives:

- ★ Solve quadratic equations by factoring.
- ★ Solve quadratic equations by the Square Root Property.
- ★ Solve quadratic equations by completing the square.
- ★ Solve quadratic equations using the quadratic formula.

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

Strategy 1: Solve by factoring.

a)  $x^2 - x - 6 = 0$

b)  $8x^2 - 10x + 3 = 0$

Strategy 2: Take the square root of both sides.

a)  $2x^2 = 14$

b)  $(2x-5)^2 - 3 = 0$

c)  $x^2 + 9 = 0$

Strategy 3: Complete the square.

a)  $x^2 + 4x + 1 = 0$       b)  $x^2 - 10x - 15 = 0$

c)  $3x^2 - 24x - 5 = 0$       d)  $x^2 - x - 6 = 0$

Strategy 4: Use the Quadratic Formula.

a)  $x^2 + 9x + 14 = 0$

b)  $2x^2 + 5x - 6 = 0$

Solve these using the quadratic formula.

a)  $2x^2 = 14$

b)  $8x^2 - 10x + 3 = 0$

Solve using any strategy.

a)  $9x^2 + 18x - 135 = 0$

b)  $(y+4)^2 - 18 = 0$

c)  $5x^2 - 16x = -2$

d)  $2y(y-2) = 7$

e)  $x^{2/3} - 9x^{1/3} + 8 = 0$