

6-3 Quadratic Equations

$$x^2 + 6x = -8$$

$$x^2 + 6x + 8 = 0$$

$$(x+4)(x+2) = 0$$

$$x+4=0$$

$$\text{or } x+2=0$$

$$x = -4 \text{ or } x = -2$$

Get 0 on

one side.

② factor

③ set each

factor to zero

④ solve each.

$$x^2 + 6 = 5x$$

$$x^2 = 5x + 6 = 0$$

$$(x-3)(x-2) = 0$$

$$x-3=0$$

$$\text{or } x-2=0$$

$$x = 3 \text{ or } x = 2$$

$$x^2 = 1$$

$$x^2 - 1 = 0$$

$$(x+1)(x-1) = 0$$

$$x+1=0 \text{ or}$$

$$x-1=0$$

$$x = 1, -1$$

Ⓐ $(x-4)(x-7) = 0$

$$x-4=0 \quad x-7=0$$

$$x = 4, 7$$

$$(x-8)(x-10) = 0$$

$$x-8=0 \quad x-10=0$$

$$x = 8, 10$$

$$(x-3)(x-1) = 0$$

$$x-3=0 \quad x-1=0$$

$$x = 3, 1$$

Ⓑ $(x+4)(x+7) = 0$

$$x+4=0 \quad x+7=0$$

$$x = -4, -7$$

$$(x+8)(x+10) = 0$$

$$x+8=0 \quad x+10=0$$

$$x = -8, -10$$

$$(x+3)(x+1) = 0$$

$$x+3=0 \quad x+1=0$$

$$x = -3, -1$$

Ⓒ $(x+14)(x+25) = 0$

$$x+14=0 \quad x+25=0$$

$$x = -14, -25$$

$$(x+11)(x+34) = 0$$

$$x+11=0 \quad x+34=0$$

$$x = -11, -34$$

$$(x+12)(x+7) = 0$$

$$x+12=0 \quad x+7=0$$

$$x = -12, -7$$

Ⓓ $(x-4)(x+1) = 0$

$$x-4=0 \quad x+1=0$$

$$(x+8)(x-7) = 0$$

$$x+8=0 \quad x-7=0$$

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

$$x+3=0 \quad x-8=0$$

Ⓔ $(x-3)(x+7) = 0$

$$x-3=0 \quad x+7=0$$

$$(x-5)(x+10) = 0$$

$$x-5=0 \quad x+10=0$$

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

$$x+3=0 \quad x-2=0$$

Ⓕ $(2x+14)(x+25) = 0$

$$2x+14=0 \quad x+25=0$$

$$\frac{-14 \quad -14}{2 \quad 2} \quad \frac{-25 \quad -25}{1 \quad 1}$$

$$\frac{2x = -14}{2} \quad \frac{-25}{1}$$

$$x = -7, -25$$

Ⓖ $(x+11)(2x+34) = 0$

$$x+11=0 \quad 2x+34=0$$

$$\frac{-11 \quad -11}{1 \quad 1} \quad \frac{-34 \quad -34}{2 \quad 2}$$

$$\frac{x = -11}{1} \quad \frac{2x = -34}{2}$$

$$x = -11, -17$$

Ⓗ $(3x+12)(x+7) = 0$

$$3x+12=0 \quad x+7=0$$

$$\frac{-12 \quad -12}{3 \quad 3} \quad \frac{-7 \quad -7}{1 \quad 1}$$

$$\frac{3x = -12}{3} \quad \frac{-7}{1}$$

$$x = -4, -7$$

Ⓖ $(3x-9)(5x+2) = 0$

$$3x-9=0 \quad 5x+2=0$$

$$x = 3, -\frac{2}{5}$$

Ⓙ $(x-8)(7x-10) = 0$

$$x-8=0 \quad 7x-10=0$$

$$x = 8, \frac{10}{7}$$

Ⓚ $(5x-30)(2x-10) = 0$

$$5x-30=0 \quad 2x-10=0$$

$$x = 6, 5$$