

1. Solve for unknown x using the quadratic formula.

$$ax^2 + bx + c = 0$$

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

$(x+1)(x+2) = 0$
 $x = -1$ OR $x = -2$
 $a=1$ $b=3$ $c=2$

$a=1$ $b=-3$ $c=2$

$$|x^2 + 3x + 2 = 0$$

$$|x^2 - 3x + 2 = 0$$

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

$$b^2 - 4ac = \cancel{(-3)^2} - 4(1)(2)$$

$$= (-3)^2 - 4(1)(2)$$

$$= 9 - 8 = 1, \sqrt{1} = 1$$

$$= \frac{-3 \pm \sqrt{3^2 - 4(1)(2)}}{2(1)}$$

$$x = \frac{-(-3) \pm 1}{2(1)} = \frac{3 \pm 1}{2}$$

$$= \frac{-3 \pm \sqrt{9-8}}{2}$$

$$x = \frac{3+1}{2} = 2 \text{ OR } x = \frac{3-1}{2} = 1$$

$$= \frac{-3 \pm \sqrt{1}}{2} = \frac{-3 \pm 1}{2}$$

$$x = \frac{-3+1}{2} = \frac{-2}{2} = -1 \text{ OR } x = \frac{-3-1}{2} = \frac{-4}{2} = -2$$

$(x-2)(x-1) = 0$
 $x = 2$ OR $x = 1$

$$|x^2 - x - 2 = 0$$

$$10x^2 + 10x - 20 = 0$$

$$(-1)^2 - 4(1)(-2) = 1 + 8 = 9,$$

$$\sqrt{9} = 3$$

$$10^2 - 4(10)(-20) = 100 + 800 = 900$$

$$\sqrt{900} = 30$$

$$x = \frac{-(-1) \pm 3}{2(1)} = \frac{1 \pm 3}{2}$$

$$x = \frac{-(-10) \pm 30}{2(10)} = \frac{-10 \pm 30}{20}$$

$$x = \frac{1+3}{2} = 2 \text{ OR } x = \frac{1-3}{2} = -1$$

$$x = \frac{-10+30}{20} = \frac{20}{20} = 1$$

$$\text{OR } x = \frac{-10-30}{20} = \frac{-40}{20} = -2$$

$$(x-2)(x+1) = 0$$