

Solving Unfactorable Quadratic Equations.

Ex1: $2x^2 - 4x - 7 = 0$
 not factorable. (CBF)

Solve by completing the square.

$$2(x^2 - 2x) - 7 = 0 \checkmark$$

$$2(\underbrace{x^2 - 2x + 1}_{-1}) - 7 = 0 \checkmark$$

$$2(x^2 - 2x + 1) - 2 - 7 = 0$$

$$2(x-1)^2 - 9 = 0$$

$$2(x-1)^2 = 9$$

$$(x-1)^2 = \frac{9}{2} \rightarrow x-1 = \pm \sqrt{\frac{9}{2}}$$

$x^2 = 4$
 $\sqrt{x^2} = \pm \sqrt{4}$
 $x = \pm 2$
 $x_1 = 2$
 $x_2 = -2$

$$\rightarrow x = 1 \pm \sqrt{\frac{9}{2}}$$

$$x_1 = 1 + \sqrt{\frac{9}{2}}$$

$$x_2 = 1 - \sqrt{\frac{9}{2}}$$

$$(x-1)^2 \neq x^2 - 1$$

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

$$= x^2 - 2x + 1$$

$$(a-b)^n \neq a^n - b^n$$

$x^2 - 1$ vs $(x-1)^2$	
LS	RS
$x^2 - 1$	$(x-1)^2$
$3^2 - 1$	$(3-1)^2$
$9 - 1$	2^2
8	4