TOPIC: The Square Root Property

- You won't always be able to **factor** to solve quadratics.
  - There are **3 other methods** that you can use:

$x^2 + x - 6 = 0$	$x^2 - 5 = 0$
$(x \quad)(x \quad) = 0$	$(x \quad)(x \quad) = 0$
Factorable? [YES | NO]	Factorable? [YES | NO]

SOLVING QUADRATIC EQUATIONS				
$ax^2 + bx + c = 0$ *(Standard form)*				
	FACTORING	**SQUARE ROOT PROPERTY**	**METHOD #3**	**METHOD #4**
USE IF	• Has _____ factors **OR** • No _____ term ($c = \_\_$)	• $(x + \#)^2 = [\textbf{constant}]$ **OR** • No __ term ($b = \_\_$)		
STEPS	**1)** Write eqn in standard form **2)** Factor completely **3)** Set factors = 0, solve for $\boldsymbol{x}$ **4)** Check solutions	**1)** _____ squared expression **2)** Take __ & __ square root **3)** Solve for $\boldsymbol{x}$ **4)** (Optional) Check solutions		

EXAMPLE: Solve the given quadratic equations using the square root property.

$(\boldsymbol{A})$ $(x + 1)^2 = 4$	$(\boldsymbol{B})$ $4x^2 - 5 = 0$

- Solutions aren't always whole numbers! They could have _____ and/or _____.

PRACTICE: Solve the given quadratic equation using the square root property.

$$\left(x - \frac{1}{2}\right)^2 - 5 = 0$$

TOPIC: The Square Root Property

PRACTICE**:** Solve the given quadratic equation using the square root property.

$$2x^2 - 16 = 0$$

Imaginary Roots

- You may get imaginary (or complex) roots when using the square root property.
  - Simplify them as you would any complex number!

EXAMPLE**:** Solve the given quadratic equation using the square root property.

$$4x^2 + 25 = 0$$

SQ. ROOT PROPERTY
1) Isolate squared expression
2) Take $+$ & $-$ square root
3) Solve for x
4) (Optional) Check solutions

Note: When a and c have the same sign in standard form, you will *always* end up with a complex answer.