10.23.15
Completing the Square
Springboard 9.1

Warm-up
Complete the Square to make a perfect trinomial
1)$x^2 + 4x +$ ____
2)$x^2 + 18x +$ ____

Factor
3)$x^2 - 8x + 16$
4)$x^2 + 10x + 25$

Simplify
5)$\sqrt{-36} =$
6) $\sqrt{-20} =$

Standard form: $ax^2 + bx + c = 0$

Completing the Square

I Try:

$x^2 - 4x + 5 = 0$

a=1

Separate the variables and constants	
Complete the perfect trinomial by adding onto both sides. $ax^2 + bx + c$ $c = \left(\frac{b}{2}\right)^2$	
Write the trinomial as factors.	
Solve for x	

I Try:

$p^2 - 3p - 88 = 0$

Separate the variables and constants	
Complete the perfect trinomial by adding onto both sides. $ax^2 + bx + c$ $c = \left(\frac{b}{2}\right)^2$	
Write the trinomial as factors.	
Solve for x	

We Try:

$x^2 - 10x + 21 = 0$

Separate the variables and constants	
Complete the perfect trinomial by adding onto both sides. $ax^2 + bx + c$ $c = \left(\frac{b}{2}\right)^2$	
Write the trinomial as factors.	

Solve for x	

You Try on whiteboards.
Left talk, Right write:
$x^2 - 6x - 16 = 0$

Separate the variables and constants	
Complete the perfect trinomial by adding onto both sides. $ax^2 + bx + c$ $c = \left(\frac{b}{2}\right)^2$	
Write the trinomial as factors.	
Solve for x	

Pg 137-150

$ax^2 + bx + c = 0$

What happens when $a \neq 1$?

I Try:

$3x^2 + 7x + 7=0$

Separate the variables and constants	
Divide both sides by $\boldsymbol{a}$	
Complete the perfect trinomial by adding onto both sides. $ax^2 + bx + c$ $c = \left(\frac{b}{2}\right)^2$	
Write the trinomial as factors.	
Solve for x	

We Try:

$7x^2 - 14x - 56 = 0$

Separate the variables and constants	
Divide both sides by $\boldsymbol{a}$	
Complete the perfect trinomial by adding onto both sides.	

$ax^2 + bx + c$ $c = \left(\frac{b}{2}\right)^2$	
Write the trinomial as factors.	
Solve for x	

You Try on your whiteboards with your partner:
Right Talk, Left Write
$4v^2 + 16v = 65$

Separate the variables and constants	
Divide both sides by $\boldsymbol{a}$	
Complete the perfect trinomial by adding onto both sides. $ax^2 + bx + c$ $c = \left(\frac{b}{2}\right)^2$	
Write the trinomial as factors.	
Solve for x	