

10.25.16
Completing the Square
Springboard 9.1

Warm-up

Complete the Square to make a perfect trinomial

1) $x^2 + 4x + \underline{\hspace{2cm}}$
2) $x^2 + 18x + \underline{\hspace{2cm}}$

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	
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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	

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

What happens when $a \neq 1$?

I Try:

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

Separate the variables and constants	
Divide both sides by 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 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 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	

