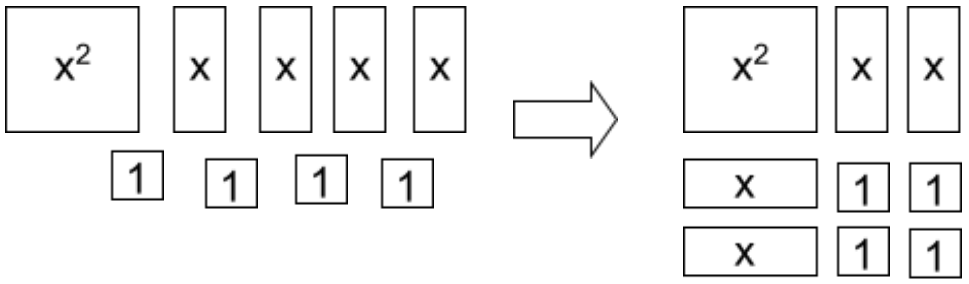
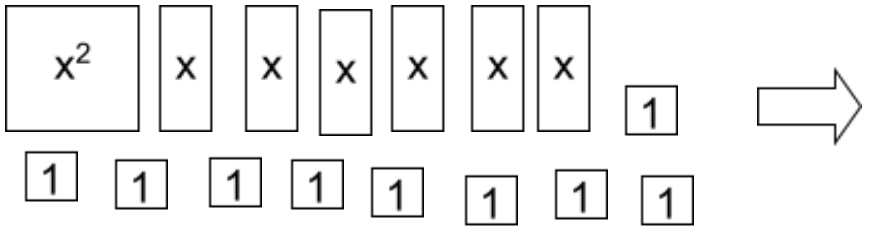
Video Notes Page – Completing the Square

For each, take the given pieces and DRAW them so that they make a perfect square!

Sample:

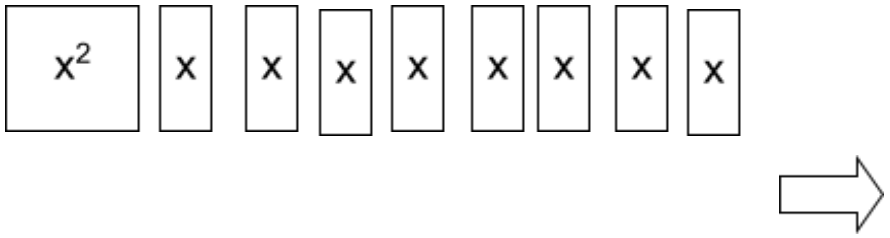


Problem 1:



Problem 2:

Can you make a square? What do you need to ADD to fill the hole that exists?



Let's make equations for situations above. Then, factor each.

Sample Problem 1 Problem 2

Perfect Square Trinomials

Remember perfect square trinomials? Factor each below by noticing the pattern: $a^2 + 2ab + b^2 = (a + b)^2$

Positives

$x^2+14x+49$ $x^2+12x+36$ $x^2+8x+16$

Negatives

$x^2-10x+25$ $x^2-12x+36$ x^2-4x+4

Fill in the missing "c" value in order to make a **perfect square** for each. **Then, factor**!

$x^2-6x+___$ $x^2+16x+___$ $x^2-20x+___$ $x^2+24x+___$

$x^2-26x+___$ $x^2-10x+___$ $x^2+2x+___$ $x^2+40x+___$

**** KEY CONCLUSION:***

How do we get the number that is
to be added in order to create an
expression that is a perfect square?
(this method is called completing the square!)

From the Video Lesson: **COMPLETING THE SQUARE**

Change each standard form quadratic to vertex form $y = (x - h)^2 + k$ form by completing the square.

$y=x^2+10x-1$ $y=x^2-6x+7$ $y=-x^2+8x+6$

Try Two! Complete the square to change each standard form quadratic to vertex form.

$y = x^2 + 14x - 6$ $y = -x^2 + 18x + 11$

What if "a" is NOT 1 ?

$y = 4x^2 + 32x - 13$

Try Two! Complete the square to change each standard form quadratic to vertex form.

$\boldsymbol{y = 2x^2 + 12x - 7}$ $\boldsymbol{y = -5x^2 + 18x - 14}$