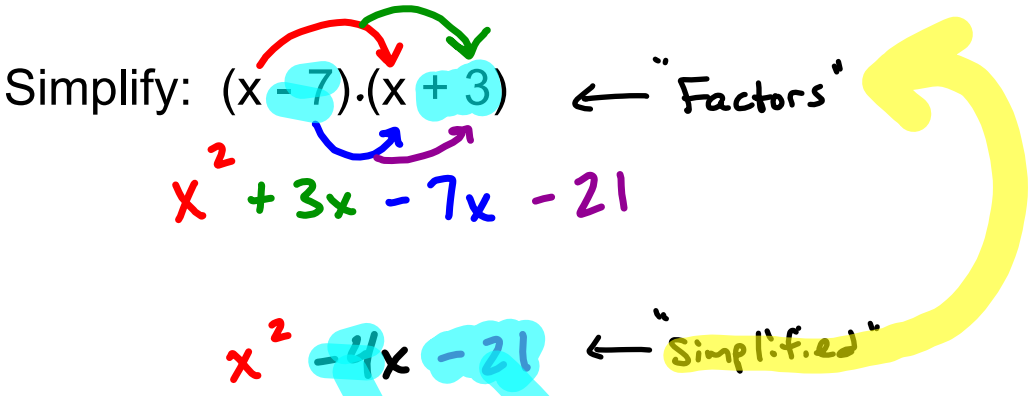
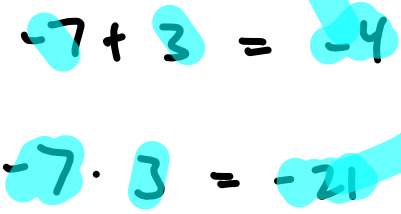
Algebra 1: 7.5 Factoring the Quadratic $ax^2 + bx + c$



This lesson is teaching you to go Backwards. From the simplified version to the "Factored" version. There's a relationship between the numbers in the original factors and the answer you get when you simplify. Can you find it?

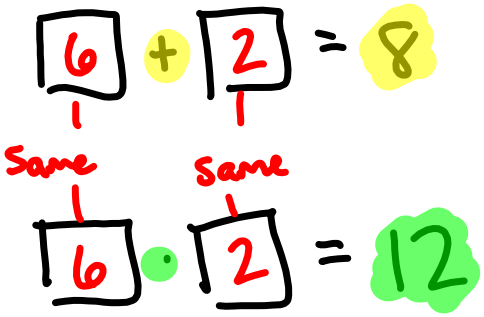


Ex 2: Factor $x^2 + 8x + 12$

What to think about: What two numbers Multiply to give you the number by itself (the constant) but Add to give you the number with the variable to the first power (x in this case)?

$(x+6)(x+2)$

Answer



This only works when you have 1 in front of the x squared!! There are other factoring methods when this isn't the case.

Ex: Factor $x^2 + 5x - 66$

$(x - 6)(x + 11)$

$-6 \cdot 11 = -66$

$-6 + 11 = 5$

1 66

2 33

3 22

6 11

"Can I add or subtract these pairs to get 5?" Yes!! 6 & 11

We need to make the 6 negative so when you add them you get 5. $-6 + 11 = 5$.

Ex: Factor $x^2 - 14x + 45$

$(x - 5)(x - 9)$

$-5 \cdot -9 = 45$

$-5 + -9 = -14$

Factors of 45

1 45

5 9 ← $5 + 9 = 14$

so I know to look into these numbers 9 & 5.

Both should be negative.

Homework:

Pg 371

6-11, 15-22