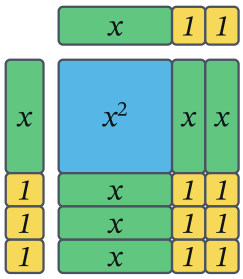
Name _____ Date _____

Factorising Trinomials

Example



$x^2 + 5x + 6 = (x + 2)(x + 3)$

We arrange the tiles x^2 , $5x$ and 6 into a rectangle. Its sides are the factors:

$2 + 3 = 5$ and $2 \times 3 = 6$.

Remember

For $x^2 + bx + c$ we look for two numbers whose **sum** is b and whose **product** is c. Then $x^2 + bx + c = (x + m)(x + n)$. When c is negative, the numbers have different signs.

1 ON YOUR OWN Find the two numbers and factorise.

Expression	sum	product	numbers	factorised
$x^2 + 7x + 12$				
$x^2 - x - 6$				
$x^2 - 8x + 15$				
$x^2 + 2x - 15$				

2 ON YOUR OWN Factorise and check by multiplying.

$x^2 + 9x + 20 =$ _____

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

$x^2 + x - 12 =$ _____

Names (pair) _____ Date _____

3 ON YOUR OWN First factor out the common factor, then factorise the trinomial.

$2x^2 + 10x + 12 =$ ☐

$3x^2 - 3x - 18 =$ ☐

4 IN PAIRS **Is it possible?** For which trinomials can you find two whole numbers? Factorise them.

Expression	Can it be factorised?	Factorised
$x^2 + x + 1$	yes / no	☐
$x^2 + 4x + 3$	yes / no	☐
$x^2 + 2x + 2$	yes / no	☐
$x^2 - 9x + 20$	yes / no	☐

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Mode **Factoring**: in the *Display* menu choose the letters x, y, z, then arrange the tiles into a rectangle and read off its sides.

5 ON YOUR OWN Factorise.

$x^2 + 11x + 24 =$ ☐

$x^2 - 2x - 24 =$ ☐

$x^2 - 13x + 36 =$ ☐

★ ON YOUR OWN **Exit card.** Factorise: $x^2 - 7x + 12 =$ ☐