

Mathematics

# Factorising Quadratics 1

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## Try this

Expand the following brackets.

$$(x + 12)(x + 1)$$

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

$$(x + 4)(x + 3)$$

What's the same and what's different?



# Independent task

1. Zaki spilled some smoothie over his work so he can no longer read the coefficient of  $x$ .

Write out all of the possible factorisations and questions.

$$x^2 + \text{[green blob]}x + 30$$

2. Factorise:

a)  $x^2 + 8x + 15$

b)  $x^2 + 11x + 28$

c)  $x^2 + 16x + 28$

d)  $x^2 + 16x + 15$

e)  $x^2 + 29x + 100$

f)  $x^2 - 100$



# Explore

What different expansions can be made by picking two blue cards and two green cards?

$$(x \text{ [blue card] [green card] })(x \text{ [blue card] [green card] })$$

+	-	1	8
+	-	2	4

Can you arrange the cards so that the brackets expand to give the following quadratics?

1)  $x^2 + 6x + 8$

2)  $x^2 - 6x + 8$

3)  $x^2 + 7x - 8$

4)  $x^2 - 7x - 8$

5)  $x^2 + 2x - 8$

6)  $x^2 - 2x - 8$

7)  $x^2 + 9x + 8$

8)  $x^2 - 9x + 8$

**What do you notice?**

