Factorising quadratics

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Putting into 2 brackets

The standard format is

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

To finish

As well ask factorising you may be asked to solve the equation.
This just means **finding the value of X** when each bracket is 0.
(X+3)=0 —-> **X=-3**

The Quadratic Formula

Use this formula on the calculator

$$ax^2 + bx + c = 0$$
$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

When to use the formula

If you have a quadratic that wont easily factorise

if the question mentions **decimal places** or **significant figures**

if the question asks for an **exact answers** or **surds**(this could be completing the squares)

Completing the square

Summery

$$x^2 + 12x - 5 = (x + 6)^2 - 41$$

The SQUARE... ...COMPLETED

Write down a **SQUARED** bracket
And then stick a number on the end to **COMPLETE** it

Steps

First take out the number in front of the X^2

eg: $2x^2+8x+5=0$ —> $\mathbf{2(x^2+4x)=0}$

then halve the b term and put into a squared bracket

eg: $2((\mathbf{x+2})^2-4))$

then times everything