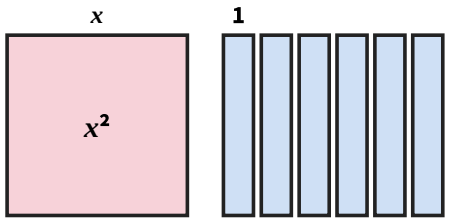
Completing the square *lesson handout*

Turn and talk

Use all of these to make as much of a square as you can.
What is missing?



We do

Expand $(x - 3)^2$.

$(x - 3)^2 =$ x^2 ☐ ☐ ☐

$=$ ☐

You do

Write $x^2 + 14x + 49$ as a bracket squared.

$14 \div 2 =$ ☐

$x^2 + 14x + 49 = (x$ ☐ $)^2$

You do

Write $x^2 - 6x + 9$ as a bracket squared.

$-6 \div 2 =$ ☐

$x^2 - 6x + 9 = (x$ ☐ $)^2$

We do

Write $x^2 + 6x + 10$ in the form $(x + p)^2 + q$.

$6 \div 2 =$ 3

$x^2 + 6x + 10 = (x$ ☐ $)^2 -$ ☐ $+ 10$

$=$ ☐

You do

Write $x^2 - 4x + 1$ in the form $(x + p)^2 + q$.

$-4 \div 2 =$ ☐

$x^2 - 4x + 1 = (x$ ☐ $)^2 -$ ☐ $+ 1$

$=$ ☐

You do

Write $x^2 - 12x + 40$ in the form $(x + p)^2 + q$.

$-12 \div 2 =$ ☐

$x^2 - 12x + 40 = (x$ ☐ $)^2 -$ ☐ $+ 40$

$=$ ☐

We do

Write down the turning point of $y = (x + 4)^2 - 3$.

Turning point (☐ , ☐)

You do

Find the turning point of $y = x^2 - 8x + 20$.

$-8 \div 2 =$ ☐

$x^2 - 8x + 20 = (x$ ☐ $)^2 -$ ☐ $+ 20$

$=$ ☐

Turning point (☐ , ☐)

You do

Find the turning point of $y = x^2 + 2x - 6$.

$2 \div 2 =$ ☐

$x^2 + 2x - 6 = (x$ ☐ $)^2 -$ ☐ $- 6$

$=$ ☐

Turning point (☐ , ☐)