Completing the square

Exit ticket ANSWERS Name _____

1 Expand $(x-5)^2$.

$x^2 - 10x + 25$

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

$(x+3)^2 - 7$

3 Find the turning point of $y = x^2 - 4x + 9$.

$(2, 5)$

The Maths Habit

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NEXT LESSON

1 **Expand $(x-5)^2$.**

$x^2 - 10x + 25$

TESTS Expanding a perfect square

LOOK FOR $x^2 + 25$ each term squared: the two $-5x$ parts are missing

$x^2 - 10x - 25$ $-5 \times -5 = +25$

FIX IT

Expand $(x+6)^2$. $x^2 + 12x + 36$

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

$(x+3)^2 - 7$

TESTS Halving the number of x, then taking off its square

LOOK FOR $(x+6)^2 - 34$ the 6 not halved

$(x+3)^2 + 11$ added 9 instead of taking it off

FIX IT

Write $x^2 + 10x + 4$ in the form $(x+p)^2 + q$. $(x+5)^2 - 21$

3 **Find the turning point of $y = x^2 - 4x + 9$.**

$(2, 5)$

TESTS Completing the square, then reading the turning point

LOOK FOR $(-2, 5)$ $(x-2)^2$ is 0 when $x = 2$

$(2, 13)$ added 4 instead of taking it off

FIX IT

Find the turning point of $y = x^2 + 10x + 20$. $(-5, -5)$