COMPLETING THE SQUARE

Please check your answers by multiplying out the brackets and simplifying. You SHOULD always end up back where you started.

Quick reminder: Half the co-efficient of the x term. Square this number and make an adjustment to arrive at the given constant. (the number at the end)

Example: $x^2 - 6x + 7$ (half the negative 6)

$(x - 3)^2$ (but -3 squared is 9...I need it to be 7 - the constant in the question)

$= (x - 3)^2$ - 2   (subtract 2 – Multiply out and check it works)

Now try these

$x^2 + 8x + 12$	$x^2 + 6x + 3$	$x^2 - 4x + 11$	$x^2 - 8x + 15$	$x^2 + 10x - 10$
$x^2 - 2x - 1$	$x^2 + 4x - 10$	$x^2 - 12x + 45$	$x^2 - 20x - 50$	$x^2 - 18x + 2$
$x^2 + 8x + 15$	$x^2 + 16x + 1$	$x^2 + 12x + 2$	$x^2 + 40x + 7$	$x^2 + 20x - 5$
$x^2 + 3x + 1$	$x^2 + 5x - 2$	$x^2 + 10x - 3$	$x^2 + 14x - 1$	$x^2 + x - 1$

SOLUTIONS

$(x + 4)^2 - 4$	$(x + 3)^2 - 6$	$(x - 2)^2 + 7$	$(x - 4)^2 - 1$	$(x + 5)^2 - 35$
$(x - 1)^2 - 2$	$(x + 2)^2 - 14$	$(x - 6)^2 + 9$	$(x - 10)^2 - 150$	$(x - 9)^2 - 79$
$(x + 4)^2 - 1$	$(x + 8)^2 - 63$	$(x + 6)^2 - 34$	$(x + 20)^2 - 393$	$(x + 10)^2 - 105$
$\left(x + \dfrac{3}{2}\right)^2 - \dfrac{5}{4}$	$\left(x + \dfrac{5}{2}\right)^2 - \dfrac{33}{4}$	$(x + 5)^2 - 28$	$(x + 7)^2 - 50$	$\left(x + \dfrac{1}{2}\right)^2 - \dfrac{5}{4}$