

Fill in the Blanks

Completing the Square $(x^2 + bx + c)$

Quadratic Expression	$\left(x + \frac{b}{2}\right)^2$	$\left(x + \frac{b}{2}\right)^2 - \left(\frac{b}{2}\right)^2$	$\pm c$	Completed Square
$x^2 + 10x$	$(x + 5)^2$	$(x + 5)^2 - 25$	$(x + 5)^2 - 25$	$(x + 5)^2 - 25$
$x^2 + 8x - 2$	$(x + 4)^2$	$(x + 4)^2 - 16$	$(x + 4)^2 - 16 - 2$	$(x + 4)^2 - 18$
$x^2 + 2x + 5$	$(x + 1)^2$	$(x + 1)^2 - 1$	$(x + 1)^2 - 1 + 5$	$(x + 1)^2 + 4$
$x^2 + 4x + 7$	$(x + 2)^2$	$(x + 2)^2 - 4$	$(x + 2)^2 - 4 + 7$	$(x + 2)^2 + 3$
$x^2 + 6x - 11$	$(x + 3)^2$	$(x + 3)^2 - 9$	$(x + 3)^2 - 9 - 11$	$(x + 3)^2 - 20$
$x^2 + 18x + 50$	$(x + 9)^2$	$(x + 9)^2 - 81$	$(x + 9)^2 - 81 + 50$	$(x + 9)^2 - 31$
$x^2 - 12x$	$(x - 6)^2$	$(x - 6)^2 - 36$	$(x - 6)^2 - 36$	$(x - 6)^2 - 36$
$x^2 - 2x + 5$	$(x - 1)^2$	$(x - 1)^2 - 1$	$(x - 1)^2 - 1 + 5$	$(x - 1)^2 + 4$
$x^2 - 6x - 1$	$(x - 3)^2$	$(x - 3)^2 - 9$	$(x - 3)^2 - 9 - 1$	$(x - 3)^2 - 10$
$x^2 - 8x + 16$	$(x - 4)^2$	$(x - 4)^2 - 16$	$(x - 4)^2 - 16 + 16$	$(x - 4)^2$
$x^2 - 4x + 5$	$(x - 2)^2$	$(x - 2)^2 - 4$	$(x - 2)^2 - 4 + 5$	$(x - 2)^2 + 1$
$x^2 + 7x + 1$	$\left(x + \frac{7}{2}\right)^2$	$\left(x + \frac{7}{2}\right)^2 - \frac{49}{4}$	$\left(x + \frac{7}{2}\right)^2 - \frac{49}{4} + 1$	$\left(x + \frac{7}{2}\right)^2 - \frac{45}{4}$
$x^2 - 5x - 3$	$\left(x - \frac{5}{2}\right)^2$	$\left(x - \frac{5}{2}\right)^2 - \frac{25}{4}$	$\left(x - \frac{5}{2}\right)^2 - \frac{25}{4} - 3$	$\left(x - \frac{5}{2}\right)^2 - \frac{37}{4}$
$x^2 + x + 6$	$\left(x + \frac{1}{2}\right)^2$	$\left(x + \frac{1}{2}\right)^2 - \frac{1}{4}$	$\left(x + \frac{1}{2}\right)^2 - \frac{1}{4} + 6$	$\left(x + \frac{1}{2}\right)^2 + \frac{23}{4}$
$x^2 - 3x + 2$	$\left(x - \frac{3}{2}\right)^2$	$\left(x - \frac{3}{2}\right)^2 - \frac{9}{4}$	$\left(x - \frac{3}{2}\right)^2 - \frac{9}{4} + 2$	$\left(x - \frac{3}{2}\right)^2 - \frac{1}{4}$
$x^2 + 10x + 18$	$(x + 5)^2$	$(x + 5)^2 - 25$	$(x + 5)^2 - 25 + 18$	$(x + 5)^2 - 7$
$x^2 - 3x + 3$	$\left(x - \frac{3}{2}\right)^2$	$\left(x - \frac{3}{2}\right)^2 - \frac{9}{4}$	$\left(x - \frac{3}{2}\right)^2 - \frac{9}{4} + \frac{12}{4}$	$\left(x - \frac{3}{2}\right)^2 + \frac{3}{4}$