

Preliminary Objective: To be able to square brackets

Objective 2: To be able to apply the process called "Completing the Square"

Extension Objective : To be able to use this to solve "quadratic equations"

Part A: Expand these Brackets

$(x + 2)^2$	$(x + 3)^2$	$(x + 7)^2$	$(x + 11)^2$
$(x + 1)^2$	$(x - 5)^2$	$(x - 6)^2$	$(x - 12)^2$

Part B: Copy and complete the following (factorising square brackets)

$x^2 + 8x + 16 = (x + \quad)^2$	$x^2 + 10x + 25 = (x + \quad)^2$
$x^2 + 16x + 64 = (x + \quad)^2$	$x^2 - 6x + 9 = (x - \quad)^2$
$x^2 - 12x + 36 = (x - \quad)^2$	$x^2 - 20x + 100 = (x - \quad)^2$

Part C: Copy and complete the following: Complete the Square

$x^2 + 6x + 1 = (x + 3)^2 - \quad$	$x^2 + 8x + 2 = (x + 4)^2 - \quad$
$x^2 + 10x + 20 = (x + 5)^2 - \quad$	$x^2 + 2x + \quad = (x + 1)^2 + 3$
$x^2 - 4x + 1 = (x - 2)^2 - \quad$	$x^2 - 12x + 10 = (x - 6)^2 - \quad$

Part D: Complete the square in the following expressions

$x^2 + 6x + 5$	$x^2 + 8x + 7$	$x^2 + 4x + 10$	$x^2 + 12x + 20$
$x^2 - 4x + 1$	$x^2 - 6x + 1$	$x^2 - 8x + 12$	$x^2 + 3x + 2$

Part E: Solve the following equations

$(x + 2)^2 = 4$	$(x + 3)^2 = 9$	$(x - 4)^2 - 16 = 0$
$x^2 + 4x + 4 = 25$	$x^2 + 6x + 1 = 0$	$x^2 + 10x + 3 = 0$