

Learning Objective 1: Factorise linear expressions

Expand the following brackets

$5(x + 2)$	$7(2x + 4)$	$5(3x - 1)$	$4(x + 1)$
$12(5x - 3)$	$14(3x + 1)$	$22(2x - 5)$	$10(4 + x)$

Factorise the following linear expressions

$10x + 15$	$7x + 21$	$15x + 5$	$7x - 14$
$6x - 2$	$22x + 44$	$20x - 4$	$20 + 10t$
$10 - 4x$	$22 + 11x$	$15 - 30x$	$7x - 1$

Expand and factorise the following expressions where possible

$10 + 4(x + 2)$	$10 + 2(x + 3)$	$20 - 4(x + 2)$	$15 - 3(x - 7)$
$4x + 5(2x + 10)$	$20x - 4(5 - 7x)$	$(x + 2)(x + 6) - x^2$	$(x + 4)^2 - x^2$

A few enrichment problems involving brackets

- 1) Show that  $5(x + 2) + 3(2x - 7) = 11x - 11$
- 2) Show that  $(x + 2)^2 - x^2$  is a multiple of 4
- 3) Expand  $(x + 1)(x + 2)$  and show how this can be used to find  $1.1 \times 2.1$
- 4) Expand  $(x + 2)^2$  and show how this can be used to find  $2.1^2$
- 5) Expand  $(x + 7)(x - 7)$  and show how this can be used to find  $107 \times 93$

Learning Objective 2: To be able to factorise expressions involving  $x^2$  terms

Part 1: Review of earlier learning. Complete the following

$5x + 10 = 5( \quad )$	$7x - 14 = 7( \quad )$	$15x + 20 = 5( \quad )$
$10x - 50 = 10( \quad )$	$32x - 4 = 4( \quad )$	$16x + 20 =$

Part 2: Extending earlier learning. Complete the following

$x^2 + 5x = x( \quad )$	$3x^2 + 10x = x( \quad )$	$5x^2 + 20x = 5x( \quad )$
$7y^2 - 10y = y( \quad )$	$10x^2 - 15x = 5x( \quad )$	$24x^2 + 30x = 6x( \quad )$

Part 3: Beginning to work out solutions without hints

$x^2 + 10x =$	$7x^2 + 10x =$	$10x^2 + 25x$
$18x^2 - 12x =$	$30x^2 - 45x$	$24x^2 - 2x$

Part 4: Reviewing expanding brackets

$5 + 2(x + 3) =$	$7 + 3(4x + 3) =$	$2(6x + 7) + 4$
$13 + 3(2x - 5) =$	$5 + 7(5x - 20)$	$4x + 3(x + 10) - 29 =$