Core 1: Completing the square

For each of the following functions:

Part 1:

1) Write in the form $y = (x + a)^2 + b$
2) Sketch the graph, clearly labelling the turning point
3) State the line of symmetry

$x^2 + 4x + 1$	$x^2 + 6x + 10$	$x^2 + 10x - 5$
$x^2 - 8x + 12$	$x^2 + 3x + 1$	$x^2 - 12x + 30$
$x^2 + 5x + 2$	$x^2 - x + 10$	$x^2 + x + 3$

Part 2:

1) Write in the form $y = a(x + b)^2 + c$
2) Sketch the graph, clearly labelling the turning point
3) State the line of symmetry

$3x^2 + 12x + 1$	$5x^2 + 20x + 9$	$7x^2 + 15x - 5$
$3x^2 - 9x + 5$	$8x^2 - 12x + 20$	$3x^2 - 15x - 10$

Core 1: Completing the square

For each of the following functions:

Part 1:

4) Write in the form $y = (x + a)^2 + b$
5) Sketch the graph, clearly labelling the turning point
6) State the line of symmetry

$x^2 + 4x + 1$	$x^2 + 6x + 10$	$x^2 + 10x - 5$
$x^2 - 8x + 12$	$x^2 + 3x + 1$	$x^2 - 12x + 30$
$x^2 + 5x + 2$	$x^2 - x + 10$	$x^2 + x + 3$

Part 2:

4) Write in the form $y = a(x + b)^2 + c$
5) Sketch the graph, clearly labelling the turning point
6) State the line of symmetry

$3x^2 + 12x + 1$	$5x^2 + 20x + 9$	$7x^2 + 15x - 5$
$3x^2 - 9x + 5$	$8x^2 - 12x + 20$	$3x^2 - 15x - 10$