Exercise 2G

Question 39:

$2x^2 + 3\sqrt{3}x + 3$

$= 2x^2 + 2\sqrt{3}x + \sqrt{3}x + 3$
$= 2x\left(x + \sqrt{3}\right) + \sqrt{3}\left(x + \sqrt{3}\right)$
$= \left(x + \sqrt{3}\right)\left(2x + \sqrt{3}\right).$

Question 40:

$2\sqrt{3}x^2 + x - 5\sqrt{3}$

$= 2\sqrt{3}x^2 + 6x - 5x - 5\sqrt{3}$
$= 2\sqrt{3}x\left(x + \sqrt{3}\right) - 5\left(x + \sqrt{3}\right)$
$= \left(x + \sqrt{3}\right)\left(2\sqrt{3}x - 5\right).$

Question 41:

$5\sqrt{5}x^2 + 20x + 3\sqrt{5}$

$= 5\sqrt{5}x^2 + 15x + 5x + 3\sqrt{5}$
$= 5x\left(\sqrt{5}x + 3\right) + \sqrt{5}\left(\sqrt{5}x + 3\right)$
$= \left(\sqrt{5}x + 3\right)\left(5x + \sqrt{5}\right).$

Question 42:

$7\sqrt{2}x^2 - 10x - 4\sqrt{2}$

$= 7\sqrt{2}x^2 - 14x + 4x - 4\sqrt{2}$
$= 7\sqrt{2}x\left(x - \sqrt{2}\right) + 4\left(x - \sqrt{2}\right)$
$= \left(x - \sqrt{2}\right)\left(7\sqrt{2}x + 4\right).$

Question 43:

$6\sqrt{3}x^2 - 47x + 5\sqrt{3}$

$= 6\sqrt{3}x^2 - 45x - 2x + 5\sqrt{3}$
$= 3\sqrt{3}x\left(2x - 5\sqrt{3}\right) - 1\left(2x - 5\sqrt{3}\right)$
$= \left(2x - 5\sqrt{3}\right)\left(3\sqrt{3}x - 1\right).$

********** END *********