1 Expand and simplify $(4x + 1)(x – 3)(5x + 6)$

Expanding first 2 brackets :

$(4x+1)(x-3) = 4x^2 - 12x + x - 3$

$= 4x^2 - 11x - 3$ (1)

Multiplying first expansion with another bracket :

$(4x^2 - 11x - 3)(5x+6)$

$= 20x^3 + 24x^2 - 55x^2 - 66x - 15x - 18$ (1)

$= 20x^3 - 31x^2 - 81x - 18$ (1)

$20x^3 - 31x^2 - 81x - 18$

(Total for Question 1 is 3 marks)

2 (c) Expand and simplify $(x + 2)(x - 5)$

$(x+2)(x-5)$

$= x^2 - 5x + 2x - 10$ (1)

$= x^2 - 3x - 10$

$x^2 - 3x - 10$ (1)

(2)

(Total for Question 2 is 2 marks)

3 (a) Expand and simplify $(m - 8)(m + 5)$

$m^2 + 5m - 8m - 40$ (1)

$= m^2 - 3m - 40$ (1)

$m^2 - 3m - 40$

(2)

(Total for Question 3 is 2 marks)

4 (a) Expand and simplify $3x(2x + 3) - x(3x + 5)$

$6x^2 + 9x - 3x^2 - 5x$ (1)

$6x^2 - 3x^2 + 9x - 5x$

$3x^2 + 4x$ (1)

$3x^2 + 4x$

(2)

(Total for Question 4 is 2 marks)

5 Expand and simplify $4x(3x + 1)(2x – 3)$
Show your working clearly.

$4x(3x+1) = 12x^2 + 4x$ (1)

$= (12x^2 + 4x)(2x - 3)$

$= 24x^3 - 36x^2 + 8x^2 - 12x$ (1)

$= 24x^3 - 28x^2 - 12x$ (1)

$24x^3 - 28x^2 - 12x$

(Total for Question 5 is 3 marks)

6 (c) Expand $4t(3t - 2)$

$= 12t^2 - 8t$ (2)

$12t^2 - 8t$

(2)

(d) Expand and simplify $(5x - 2)(x + 4)$

$= 5x^2 + 20x - 2x - 8$ (1)

$= 5x^2 + 18x - 8$ (1)

$5x^2 + 18x - 8$

(2)

(Total for Question 6 is 4 marks)

7 (b) Expand and simplify $2x(x - 5)(x - 3)$

$= 2x(x-5)(x-3)$

$= 2x(x^2 - 3x - 5x + 15)$ (1)

$= 2x(x^2 - 8x + 15)$ (1)

$= 2x^3 - 16x^2 + 30x$ (1)

$2x^3 - 16x^2 + 30x$

(3)

(Total for Question 7 is 3 marks)

8 (a) Expand and simplify $4x(2x + 5) – 3x(2x – 3)$

$= 4x(2x+5) - 3x(2x-3)$

$= 8x^2 + 20x - 6x^2 + 9x$ (1)

$= 2x^2 + 29x$ (1)

$2x^2 + 29x$

(2)

(Total for Question 8 is 2 marks)

9 (a) Expand $3c^3(c + 4)$

$3c^4 + 12c^3$

$3c^4 + 12c^3$ (2)

(2)

(Total for Question 9 is 2 marks)

10 (a) Expand and simplify $(n - 6)(n + 4)$

$n^2 + 4n - 6n - 24$ (1)

$n^2 - 2n - 24$ (1)

$n^2 - 2n - 24$

(2)

(Total for Question 10 is 2 marks)

11 (a) Expand and simplify $(y + 4)(2 - y)$

$2y - y^2 + 8 - 4y$ (1)

$= -y^2 - 4y + 2y + 8$

$= -y^2 - 2y + 8$

$8 - 2y - y^2$ (1)

(2)

(Total for Question 11 is 2 marks)

12 (a) Expand $4x(x - 5)$

$= 4x^2 - 20x$

$4x^2 - 20x$ (1)

.....

(1)

(Total for Question 12 is 1 marks)

13 (b) Expand and simplify $(x + 5)(x – 7)$

$x^2 - 7x + 5x - 35$ (1)

$= x^2 - 2x - 35$ (1)

$x^2 - 2x - 35$

(2)

(Total for Question 13 is 2 marks)