

1

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

[3 marks]

$$(x-3)(x+2) = x^2 + 2x - 3x - 6$$
$$= x^2 - x - 6 \quad (1)$$

$$(x^2 - x - 6)(x + 5) = x^3 + 5x^2 - x^2 - 5x - 6x - 30 \quad (1)$$
$$= x^3 + 4x^2 - 11x - 30 \quad (1)$$

Answer $x^3 + 4x^2 - 11x - 30$

2

Expand and simplify fully $(x-3)(x-4)(x+8)$

[3 marks]

$$(x-3)(x-4) = x^2 - 7x + 12 \quad (1)$$

$$(x^2 - 7x + 12)(x+8) = x^3 + 8x^2 - 7x^2 - 56x + 12x + 96 \quad (1)$$

$$= x^3 + x^2 - 44x + 96 \quad (1)$$

Answer $x^3 + x^2 - 44x + 96$