

1. Simplify. (2 marks each)

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

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

$$x^2 - 2x + 5x - 10$$

$$\underline{x^2 + 3x - 10}$$

b) $(4j+2k)(6j-3k)$

$$4j(6j-3k) + 2k(6j-3k)$$

$$24j^2 - 12jk + 12jk - 6k^2$$

$$\underline{24j^2 - 6k^2}$$

c) $(2x-1)(5x^2+4x-5)$

$$2x(5x^2+4x-5) - 1(5x^2+4x-5)$$

$$10x^3 + 8x^2 - 10x - 5x^2 - 4x + 5$$

$$\underline{10x^3 + 3x^2 - 14x + 5}$$

d) $(x-3)^2$

$$(x)^2 - 2(x)(3) + 3^2$$

$$\underline{x^2 - 6x + 9}$$

e) $(x+3)(x-3)$

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

$$\underline{x^2 - 9}$$

2. Simplify. (3 marks)

$(2x-1)(4x+5) + 2(x+1)(2x-3)$

$$= 2x(4x+5) - 1(4x+5) + 2(x(2x-3) + 1(2x-3))$$

$$= 8x^2 + 10x - 4x - 5 + 2(2x^2 - 3x + 2x - 3)$$

$$= 8x^2 + 6x - 5 + 4x^2 - 2x - 6$$

$$= 12x^2 + 4x - 11$$

1. Simplify. (2 marks each)

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

$$\underline{x^2 - 3x - 10}$$

b) $(4j + 3k)(6j - 2k)$

$$24j^2 - 8jk + 18jk - 6k^2$$

$$\underline{24j^2 + 10jk - 6k^2}$$

c) $(3x - 1)(5x^2 + 4x - 2)$

$$15x^3 + \underline{12x^2} - 6x - \underline{5x^2} - 4x + 2$$

$$\underline{15x^3 + 7x^2 - 10x + 2}$$

d) $(x + 3)^2$

$$\underline{x^2 + 6x + 9}$$

e) $(x + 2)(x - 2)$

$$\underline{x^2 - 4}$$

2. Simplify. (3 marks)

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

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

$$8x^2 + 4x - 12x - 6 + 3(6x^2 - 2x + 3x - 1)$$

$$8x^2 - 8x - 6 + 3(6x^2 + 1x - 1)$$

$$8x^2 - 8x - 6 + 18x^2 + 3x - 3$$

$$26x^2 - 5x - 9$$