

Page 3 of 4

Max John Baker
Max John Baker
2013483

27/10/2020 15:37

4.
(i) $x^8 \times x \times x^9$

$$x^8 \times x^1 \times x^1 \times x^9$$

$$8 + 1 + 1 + 9 = 19$$

$$= x^{19}$$

(ii)

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

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

$$= 8x^9$$

(iii)

$$\frac{x^{12} \times x^8}{x}$$

$$\frac{x^{12} \times x \times x \times x^8}{x}$$

$\rightarrow$

$$\frac{x^{21}}{x}$$

$$\frac{x^{21}}{x}$$

$$= x^{20}$$

$$\downarrow$$
$$x^{20}$$

(iv) $5x^2 \times 3x^4$

$$5 \times 3 = 15 \rightarrow 15x^2 \times x^4$$

$$15x^{2+4} = 15x^6$$

Page 1 of 4

max John baker 2013483

27/10/2020 15:20

1

+

x

$$(i) \quad x^2 + 8x + 15 = 0$$

$$(x+5)(x+3) = 0$$

$$x+5 = 0$$

$$x = -5$$

$$x+3 = 0$$

$$x = -3$$

$$(ii) \quad x^2 - 225 = 0$$

$$x^2 = 225$$

$$x = \pm 15$$

$$x = 15$$

$$(iii) \quad x^2 + 11x + 30 = 0$$

$$(x+6)(x+5) = 0$$

$$x+6 = 0 \quad x+5 = 0$$

$$x = -6$$

$$x = -5$$

$$(iv) \quad x^2 - 6x + 8 = 0$$

$$2x^2 + 7x + 2x + 7 = 0$$

$$x(2x+7) + 2x+7 = 0$$

$$(2x+7)(x+1) = 0$$

$$2x+7 = 0$$

$$x+1 = 0$$

$$x = \frac{7}{2}$$

$$x = -1$$

$$(v) \quad 2x^2 + 9x + 7 = 0$$

$$x(2x+7) + 2x+7 = 0$$

$$(2x+7)(x+1) = 0$$

$$2x+7 = 0$$

$$x+1 = 0$$

Page 2 of 4

max john baker
2013483

27/10/2020 15:31

2.

$$12x^2 + 5x = 7$$

$$12x^2 + 5x - 7 = 0$$

$$12x^2 + 12x - 7x - 7 = 0$$

$$12x(x+1) - 7(x+1) = 0$$

$$(x+1)(12x-7) = 0$$

$$x+1 = 0$$

$$x = -1$$

$$12x - 7 = 0$$

$$x = \frac{7}{12}$$

3. $5x + 2y = 22$

$$4x + 3y = 19$$

~~Handwritten scribbles~~

~~Handwritten scribbles~~

~~Handwritten scribbles~~

5.

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

?

6.

$$(i) \quad 5(2x + 1) = 4(3x + 2)$$

$$10x + 5 = 12x + 8$$

$$10x - 12x + 5 = 8 \Rightarrow 10x - 12x = 8 - 5$$

$$-2x = 8 - 5 \Rightarrow -2x = 3$$

$$x = -\frac{3}{2}$$

$$(ii) \quad 12x + 5 = 4x - 1$$

$$12x - 4x + 5 = -1$$

$$8x - 4x = -1 - 5$$

$$8x = -1 - 5 \Rightarrow 8x = -6$$

$$x = -\frac{3}{4}$$

(iii)

7