

1)

$$i) x^2 + 8x + 15 = 0$$

$$(x+3)(x+5)$$

$$x = -3 \quad x = -5$$

$$ii) x^2 - 225 = 0$$

$$iii) x^2 + 11x + 30 = 0$$

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

$$x = -5$$

$$x = -6$$

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

$$(x-2)=0 \quad (x-4)=0$$

$$x = +2$$

$$x = +4$$

$$1) 2x^2 - 6x + 8 = 0$$

$$(2x - 7) = 0 \quad (x - 1) = 0$$

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

$$x = 1$$

$$x = 3.5$$

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

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

$$x = \frac{-5 \pm \sqrt{5^2 - 4(12)(-7)}}{2(12)}$$

$$x = \frac{-5 \pm \sqrt{361}}{24}$$

$$x = \frac{-5 + \sqrt{361}}{24}$$

$$x = \frac{-5 - \sqrt{361}}{24}$$

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

$$x = -1$$

$$\begin{aligned} 3) \quad 5x + 2y &= 22 \\ 4x + 3y &= 19 \end{aligned}$$

4)

$$\begin{aligned} \text{i)} \quad x^8 \times x \times x \times x^9 \\ = x^{18} \end{aligned}$$

$$\text{ii)} \quad (2x^3)^3$$

$$\begin{aligned} 2x^3 \times 2x^3 \times 2x^3 \\ = 8x^9 \end{aligned}$$

$$\text{iii)} \quad \frac{x^{12} \times x^8}{x} = \frac{x^{20}}{x} = x^{19}$$

$$\begin{aligned} \text{iv)} \quad 5x^2 \times 3x^4 \\ = 15x^6 \end{aligned}$$

$$v) \frac{10x^5}{2x^2} = 5x^3$$

$$5) 2(x^2 + y^2) + x^2(x - y) + 3xy - x^3$$

$$2x^2 + 2y^2 + \cancel{x^3} - x^2y + 3xy - \cancel{x^3}$$

$$= 2x^2 + 2y^2 - x^2y + 3xy$$

6)

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

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

$$10x - 12x = 8 - 5$$

$$-2x = 3$$

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

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

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

$$8x = -6$$

PAGE 5

$$x = \frac{-6}{8}$$

iii)