

$$4) i) x^8 \times x \times x^9 = x^{18}$$

$$ii) (2x^3)^3 = (2x)(x)(x)^3$$

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

$$iv) 5x^2 \times 3x^4 = 15x^6$$

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

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

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

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

$$6) i) 5(2x+1) = 4(3x+2)$$

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

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

$$-2x = -2$$

$$\boxed{x=1}$$

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

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

$$8x = -6$$

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

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

$$iii) \frac{(4x-1)}{3} = \frac{(5x+2)}{2}$$

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

$$8x-2 = 15x+6$$

$$8x-15x = 6+2$$

$$-7x = 8$$

$$\boxed{x = \frac{8}{-7}}$$