

ACHA 3000

$$\textcircled{1} \text{ (i) } x^4 \cdot x \cdot x^6 \cdot x \cdot x$$

$$x^{4+6+1}$$

$$x^{11}$$

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

$$2 \cdot 3 \cdot 2 \cdot x^{2+3+1}$$

$$12x^6$$

$$\text{(iii) } \frac{x^4 \cdot x^3 \cdot x^2}{x^9}$$

$$\frac{x^{4+3+2}}{x^9}$$

$$\frac{x^9}{x^9} = 1$$

$$\text{(iv) } (3x^2)^3$$

$$3x^2 \cdot 3x^2 \cdot 3x^2$$

$$27x^6$$

$$\text{(v) } \sqrt{x} \cdot \sqrt{x}$$

$$= x$$

$$\textcircled{2} \text{ (i) } 15x - 2 = 12x + 9$$

$$15x - 12x = 9 + 2$$

$$\frac{3x}{3} = \frac{11}{3}$$

$$x = \frac{11}{3}$$

$$\text{(ii) } 3(7x - 1) = 6(x + 3)$$

$$21x - 3 = 6x + 18$$

$$21x - 6x = 18 + 3$$

$$\frac{15x}{15} = \frac{21}{15}$$

$$x = \frac{2x^3}{15^3} = x^2 \frac{7}{5}$$

$$\text{(iii) } \frac{5x+3}{4} = \frac{2x-1}{9}$$

$$9 \cdot (5x+3) = 4 \cdot (2x-1)$$

$$45x + 27 = 8x - 4$$

$$45x - 8x = -4 - 27$$

$$\frac{37x}{37} = \frac{-31}{37}$$

$$x = \frac{-31}{37}$$