

Time: 15:20
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Module code: ACHA 3000
Student id: 2005263

Q1) i) $x^4 \times x^6 \times x = x^{11}$

ii) $2x^2 \times 3x^3 \times 2x = 12x^6$

iii) $\frac{x^4 \times x^3 \times x^2}{x^9} = \frac{x^9}{x^9} = 1$

iv) $(3x^2)^3 = 27x^6$

v) $\sqrt{x} \times \sqrt{x} = x^{\frac{1}{2}} \times x^{\frac{1}{2}} = x^1 = x$

Q2) i) $15x - 2 = 12x + 9$

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

$$3x = 11$$

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

ii) $3(7x - 1) = 6(x + 3)$

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

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

$$15x = 21$$

$$x = \frac{21}{15} \div 3$$

$$x = \frac{7}{5}$$

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

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

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

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

$$37x = -31$$

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