

Q1)

Halley moon

21:00 - 22:00

i) $x^6 \times x^8 \times x^2 \times x$ Page 1 of 5

$$6+8+2+1=17$$

$$\underline{x^{17}}$$

ii) $(2x^2)^4 \times 3x^2$

$$\underline{16x^8 \times 3x^2}$$

iii) $\frac{x^2 \times x^{10} \times x}{x^3}$

$$\frac{x^{13}}{x^3} = \underline{x^{10}}$$

iv) $2\sqrt{x} \times 3\sqrt{x}$

v) $1 = \underline{x^0}$

2)

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$$i) 7x - 1 = 5x + 4$$

$$\begin{array}{l} +1 \downarrow \\ 7x = 5x + 5 \end{array}$$

$$\begin{array}{l} -5x \downarrow \\ 2x = 5 \end{array}$$

$$\begin{array}{l} \div 2 \downarrow \\ \underline{x = 2.5} \end{array}$$

$$ii) 10(3x + 2) = 7(-2x - 1)$$

$$\begin{array}{l} +14x \downarrow \\ 30x + 20 = -14x - 1 \end{array}$$

$$\begin{array}{l} +14x \downarrow \\ 44x + 20 = -1 \end{array}$$

$$\begin{array}{l} -20 \downarrow \\ 44x = -21 \end{array}$$

$$\begin{array}{l} \div 44 \downarrow \\ \underline{x = -0.477\bar{2}} \end{array}$$

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

$$x = -1.4$$

$$iv) (x+2)^2 = (x+3)(x+5)$$

$$(x+2)(x+2) = (x+3)(x+5)$$

$$x^2 + 4x + 4 = x^2 + 8x + 15$$

$$\begin{array}{r} -x^2 \end{array} \quad 4x + 4 = 8x + 15$$

$$\begin{array}{r} -4x \end{array} \quad 4 = 4x + 15$$

$$\begin{array}{r} -15 \end{array} \quad -11 = 4x$$

$$\begin{array}{r} :4 \end{array} \quad \underline{x = -2.75}$$

$$3) \quad i) x^2 + 9x + 14 = 0$$

$$\underline{(x+7)(x+2)}$$

$$ii) x^2 - 7x + 10 = 0$$

$$\underline{(x-5)(x-2)}$$

3)

$$\text{iii) } x^2 + 8x - 20 = 0$$

$$\underline{(x-2)(x+10)}$$

$$\text{iv) } x^2 - 49 = 0$$

$$\underline{(x+7)(x-7)}$$

$$\text{v) } 2x^2 - 3x - 20 = 0$$

$$\underline{2(x-2.5)(x+4)}$$

$$4) 17x^2 = -5x + 14$$

$$17x^2 + 5x - 14 = 0$$

$$x = \frac{-5 \pm \sqrt{977}}{2 \times 17}$$

$$x = \frac{-5 + \sqrt{977}}{34} = 0.772$$

$$x = \frac{-5 - \sqrt{977}}{34} = -1.066$$

$$5) \quad 6x + 5y = 35$$

$$7x - 4y = 31$$

$$x - 9y = -4$$

$$x = 5$$

$$y = 1$$

Q

$$i) \quad 10p^3q^2 - 5p^2q + 15p^4q = 5p^2q \times (2p - 1 + 3p^2)$$

$$ii) \quad 2x^2y - 4xy^2 = 2xy \times (x - 2y)$$

