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Q1) (i) $x^6 \times x^8 \times x^2 \times x = x^{17}$

(ii) $(2x^2)^4 \times 3x^3 = 16x^8 \times 3x^3 = 48x^{11}$

(iii) $\frac{x^2 \times x^{10} \times x}{x^3} = \frac{x^{13}}{x^3} = x^{10}$

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

(v) 1

Q2) (i) $7x - 1 = 5x + 4$

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

$$2x = 5$$

$$x = \frac{5}{2}$$

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Q₂ (ii) $10(3x+2) = 7(-2x-1)$

$$30x + 20 = -14x - 7$$

$$30x + 14x = -7 - 20$$

$$44x = -27$$

$$x = \frac{-27}{44} = -0.6136$$

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

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

$$3x - 3 = 8x + 4$$

$$-3 - 4 = 8x - 3x$$

$$-7 = 5x$$

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

Q3)

$$(i) x^2 + 9x + 14 = 0$$

$$(x + 2)(x + 7) = 0$$

$$x + 2 = 0 \quad x + 7 = 0$$

$$x = -2 \quad x = -7$$

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

$$(x - 2)(x - 5) = 0$$

$$x - 2 = 0 \quad x - 5 = 0$$

$$x = 2 \quad x = 5$$

$$(iii) x^2 + 8x - 20 = 0$$

$$(x + 10)(x - 2) = 0$$

$$x + 10 = 0 \quad x - 2 = 0$$

$$x = -10 \quad x = 2$$

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Q3)

$$(iv) \quad x^2 - 49 = 0$$

$$(x - 7)(x + 7) = 0$$

$$x - 7 = 0 \quad x + 7 = 0$$

$$x = 7 \quad x = -7$$

$$(v) \quad 2x^2 - 3x - 20 = 0$$

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

Q4

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

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

$$\overset{A}{17}x^2 + \overset{B}{5}x - \overset{C}{14} = 0$$

$$x = \frac{-5 \pm \sqrt{(5)^2 - 4(17)(-14)}}{2(17)}$$

$$x = \frac{-5 \pm \sqrt{25 + 952}}{34}$$

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

$$x = \frac{-5 + 31.256}{34}$$

$$x = \frac{-5 - 31.256}{34}$$

$$x = 0.77$$

$$x = -1$$

Q5)

$$6x + 5y = 35 \quad (1) \times 4$$

$$7x - 4y = 31 \quad (2) \times 5$$

$$24x + 20y = 140 \quad (3)$$

$$+ 35x - 20y = 155 \quad (4)$$

$$59x = 295$$

$$\boxed{x = 5} \rightarrow (2)$$

$$7(5) - 4y = 31$$

$$35 - 4y = 31$$

$$4y = 4$$

$$\boxed{y = 1}$$

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(Q6)

(i) $10p^3q^2 - 5p^2q + 15p^4q$

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Q7