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$$\textcircled{i} \textcircled{a} x^6 \overset{+}{\times} x^8 \overset{+}{\times} x^2 \overset{+}{\times} x$$
$$= \underline{x^{17}}$$

$$\textcircled{ii} (2x^2)^4 \times 3x^3$$

$$2x^2 + 2x^2 + 2x^2 + 2x^2 = 16x^8$$

$$16x^8 \times 3x^3 = \underline{48x^{11}}$$

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

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

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

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

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

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

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

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

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

$$\frac{-5 \pm 31.2569992162}{34}$$

$$x = \underline{0.77} \quad \text{and} \quad x = \underline{-1.07}$$

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(IM) $x^2 - 49 = 0$

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

$x+7=0$ $x-7=0$

$x = -7$

$x = 7$

(V) $2x^2 - 3x - 70 = 0$

$(2x+5)(x-4) = 0$

$2x+5=0$

$x-4=0$

$2x = -5$

$x = 4$

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

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

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

$$x+7=0$$

$$x+2=0$$

$$x = \underline{\underline{-7}}$$

$$x = \underline{\underline{-2}}$$

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

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

$$x-5=0$$

$$x-2=0$$

$$x = \underline{\underline{5}}$$

$$x = \underline{\underline{2}}$$

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

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

$$x-2=0$$

$$x+10=0$$

$$x = \underline{\underline{2}}$$

$$x = \underline{\underline{-10}}$$

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

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

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

-4 -4

$$3x - 7 = 8x$$

$-3x$ $-3x$

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

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

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

$$x^2 + 2x + 2x + 4 = x^2 + 5x + 3x + 15$$

$$4x + 4 = 8x + 15$$

$-4x$ $-4x$

$$4 = 4x + 15$$

-15 -15

$$4x = -11$$

$$x = \frac{-11}{4}$$

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$$\textcircled{2} \text{ (i) } \begin{array}{r} 7x \\ -5x \end{array} - 1 = \begin{array}{r} 5x \\ -5x \end{array} + 4$$

$$\begin{array}{r} 2x - 1 \\ +1 \end{array} = \begin{array}{r} 4 \\ +1 \end{array}$$

$$2x = 5 \quad x = \frac{5}{2} \text{ or } 2.5$$

$$\text{(ii) } \overbrace{10(3x+2)} = \overbrace{7(-2x-1)}$$

$$\begin{array}{r} 30x + 20 \\ +14x \end{array} = \begin{array}{r} -14x - 7 \\ +14x \end{array}$$

$$\begin{array}{r} 44x + 20 \\ -20 \end{array} = \begin{array}{r} -7 \\ -20 \end{array}$$

$$44x = -27$$

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

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⑥ (i) $10p^3q^2 - 5p^2q + 15p^4q$

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

~~$$5p^2q + 10p^3q^2 + 15p^4q$$~~

~~$$5p^2q(1 + 2p + 3p^2)$$~~

$$5pq(3p^2 + 2pq - 1)$$

(ii) $2x^2y - 4xy^2$

~~$$2xy(x - 2y)$$~~

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$$\begin{aligned} \textcircled{5} \quad & 6x + 5y = 35 \\ & 7x - 4y = 31 \end{aligned}$$

$$\begin{aligned} + \quad & 24x + 20y = 140 \\ & 35x - 20y = 155 \end{aligned}$$

$$\begin{array}{r} 59x = 295 \\ \hline 59 \end{array}$$

$$x = \underline{5}$$

$$(6 \times 5) + 5y = 35$$

$$\begin{array}{r} 30 + 5y = 35 \\ -30 \quad -30 \end{array}$$

$$5y = 5$$

$$y = \underline{1}$$