

Q1) Improper - $\frac{6}{5}$ Mixed - $1\frac{1}{2}$
Proper - $\frac{1}{2}$

Q2) (i) $2\frac{1}{4} + 3\frac{1}{3}$

$$= \frac{(2 \times 4) + 1}{4} + \frac{(3 \times 3) + 1}{3}$$

$$= \frac{9}{4} + \frac{10}{3}$$

$$= \frac{(3 \times 9) + (4 \times 10)}{12}$$

$$= \frac{27 + 40}{12} = \frac{67}{12}$$

$$= 5\frac{7}{12}$$

(ii) $2\frac{2}{3} \times 1\frac{1}{4}$

$$= \frac{(2 \times 3) + 2}{3} \times \frac{(1 \times 4) + 1}{4}$$

$$= \frac{8}{3} \times \frac{5}{4}$$

$$= \frac{2}{3} \times \frac{5}{1} = \frac{10}{3} = 3\frac{1}{3}$$

Q3) (i) $x^2 + 8x + 15 = 0 \rightarrow (x+5)(x+3) = 0$
 $x = -5$ $x = -3$

(ii) $x^2 - 100 = 0 \rightarrow (x+10)(x-10) = 0$
 $x = -10$ $x = 10$

(iii) $x^2 + 6x + 8 = 0 \rightarrow (x+4)(x+2) = 0$
 $x = -4$ $x = -2$

(iv) $x^2 - 3x + 2 = 0 \rightarrow (x-2)(x-1) = 0$
 $x = 2$ $x = 1$

Q4) $8x^2 + 2x - 7 = 0$

$$x = \frac{-2 \pm \sqrt{(2)^2 - 4(8)(-7)}}{2(8)}$$

$$= \frac{-2 \pm \sqrt{4 + 224}}{16}$$

$$= \frac{-2 \pm \sqrt{228}}{16}$$

$$= \frac{-2 \pm 15.10}{16}$$

$$x = \frac{-2 + 15.10}{16}$$

$$x = 0.82$$

$$x = \frac{-2 - 15.10}{16}$$

$$x = -1.07$$

Q5)

$$5x + 2y = 9 \quad (1)$$

$$3x - y = 1 \quad (2) \times 2$$

$$6x - 2y = 2 \quad (3)$$

$$\hline (1) + (3)$$

$$11x = 11$$

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

$$(x=1) \text{ Sub in } (1)$$

$$5 + 2y = 9$$

$$2y = 9 - 5$$

$$2y = 4$$

$$(y=2)$$

Q6)

$$u = \frac{P + Wq}{x}$$

[W]

$$ux = P + Wq$$

$$ux - P = Wq$$

$$\frac{ux - P}{q} = W$$

$$Q7) \quad (i) \quad x^2 \times x = x^3$$

$$(ii) \quad (2x^4)^3 = 8x^{12}$$

$$(iii) \quad \frac{x^7 \times x}{x^3} = \frac{x^8}{x^3} = x^5$$

$$(iv) \quad 8x^2 \times 3x^2 = 24x^4$$

$$Q8) \quad (i) \quad 10(2x - z) + 3(2x - 3y) + 4x + 1$$

$$20x - 10z + 6x - 9y + 4x + 1$$

$$30x - 9y - 10z + 1$$

$$Q9) \quad (i) \quad 10(x - 5) = 2(6x + 1)$$

$$10x - 50 = 12x + 2$$

$$-50 - 2 = 12x - 10x$$

$$-52 = 2x$$

$$\frac{-52}{2} = x$$

$$-26 = x$$

$$(ii) \quad \frac{6x - 1}{5} = \frac{(x + 1)}{4}$$

$$4(6x - 1) = 5(x + 1)$$

$$24x - 4 = 5x + 5$$

$$24x - 5x = 5 + 4$$

$$19x = 9$$

$$x = \frac{9}{19}$$

$$x = 0.47$$