

$$9(ii) \quad \frac{x}{3} + \frac{y}{4} = 4$$

$$(\times 12) \quad 4x + 3y = 48 \dots \textcircled{i}$$

$$\frac{5x}{6} - \frac{y}{8} = 4$$

$$(\times 24) \quad 20x - 3y = 96 \dots \textcircled{ii}$$

$$\textcircled{i} + \textcircled{ii}$$

$$4x + 3y = 48$$

$$20x - 3y = 96$$

$$24x = 144$$

$$\Rightarrow x = \frac{144}{24} = 6$$

$$\Rightarrow x = 6$$

Solve \textcircled{i}

$$4 \times 6 + 3y = 48$$

$$\Rightarrow 24 + 3y = 48$$

$$\Rightarrow 3y = 24$$

$$\Rightarrow y = 8$$

$$\therefore x = 6, y = 8$$

$$9(iii) \quad 4x + \frac{6}{y} = 15$$

$$6x - \frac{8}{y} = 14, y \neq 0$$

Put $\frac{1}{y} = a$

$$4x + 6a = 15 \dots \textcircled{i} \quad \times 4$$

$$6x - 8a = 14 \dots \textcircled{ii} \quad \times 3$$

$$\textcircled{i} \times 4 + \textcircled{ii} \times 3$$

$$16x + 24a = 60$$

$$18x - 24a = 42$$

$$34x = 102$$

$$\Rightarrow x = \frac{102}{34} = 3$$

Solve in \textcircled{i}

$$4 \times 3 + 6a = 15$$

$$\Rightarrow 6a = 15 - 12$$

$$\Rightarrow a = \frac{3}{6} = \frac{1}{2}$$

$$\Rightarrow \frac{1}{y} = \frac{1}{2}$$

$$\Rightarrow y = 2$$

$$\therefore x = 3, y = 2$$