

4(i) let fixed charges = Rs x
 let fare per day = Rs y
 acc. to condition I

$$x + 20y = 1000 \dots \textcircled{i}$$

acc. to condition II

$$x + 26y = 1180 \dots \textcircled{ii}$$

$$\textcircled{i} - \textcircled{ii}$$

$$\begin{array}{r} x + 20y = 1000 \\ x + 26y = 1180 \\ \hline -6y = -180 \\ \Rightarrow y = \frac{180}{6} = 30 \\ \Rightarrow y = 30 \end{array}$$

Sub \textcircled{i}

$$\begin{aligned} x + 20 \times 30 &= 1000 \\ \Rightarrow x &= 1000 - 600 \\ &= 400 \end{aligned}$$

\therefore fixed charges = Rs 400
 Fare per day = Rs 30

4(ii) let numerator = x
 denominator = y
 Fraction = $\frac{x}{y}$

acc. to condition I

$$\frac{x-1}{y} = \frac{1}{3}$$

$$\Rightarrow 3x - 3 = y$$

$$\Rightarrow 3x - y = 3 \dots \textcircled{i}$$

acc. to condition II

$$\frac{x}{y+8} = \frac{1}{4}$$

$$\Rightarrow 4x = y + 8$$

$$\Rightarrow 4x - y = 8 \dots \textcircled{ii}$$

$$\textcircled{i} - \textcircled{ii}$$

$$3x - y = 3$$

$$4x - y = 8$$

$$\begin{array}{r} 3x - y = 3 \\ 4x - y = 8 \\ \hline -x = -5 \end{array}$$

$$\Rightarrow x = 5$$

Sub \textcircled{i}

$$3 \times 5 - y = 3$$

$$\Rightarrow y = 15 - 3 = 12$$

$$\therefore \text{Fraction} = \frac{5}{12}$$