

Ex 3.4 Question 2

2(i) let numerator = x
denominator = y

\therefore fraction = $\frac{x}{y}$
acc to condition I

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

$$\Rightarrow x+1 = y-1$$

$$\Rightarrow x-y = -2 \dots \textcircled{i}$$

acc. to cII

$$\frac{x}{y+1} = \frac{1}{2}$$

$$\Rightarrow 2x = y+1$$

$$\Rightarrow 2x - y = 1 \dots \textcircled{ii}$$

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

$$x - y = -2$$

$$2x - y = 1$$

$$\begin{array}{r} - \quad + \quad - \\ \hline -x = -3 \end{array}$$

$$\Rightarrow x = 3$$

Sub \textcircled{ii}

$$2 \times 3 - y = 1$$

$$\Rightarrow y = 6 - 1 = 5$$

$$x = 3, y = 5$$

$$\text{Fraction} = \frac{3}{5}$$

2(ii) let nuris present age = x years

Sonus present age = y years

acc. to condition I

$$x-5 = 3(y-5)$$

$$\Rightarrow x-5 = 3y-15$$

$$\Rightarrow x-3y = -10 \dots \textcircled{i}$$

acc to cII

$$x+10 = 2(y+10)$$

$$\Rightarrow x+10 = 2y+20$$

$$\Rightarrow x-2y = 10 \dots \textcircled{ii}$$

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

$$x - 3y = -10$$

$$x - 2y = 10$$

$$\begin{array}{r} - \quad + \quad - \\ \hline -y = -20 \end{array}$$

$$\Rightarrow y = 20$$

Sub \textcircled{ii}

$$x - 2 \times 20 = 10$$

$$\Rightarrow x = 10 + 40$$

$$\Rightarrow x = 50$$

\therefore nuris present age = 50 years

Sonus present age = 20 years