

3(ii)

Ex 3.7 Question 3

let the two supplementary angles be x°, y°

$$x + y = 180 \dots \textcircled{i}$$

$$x - y = 18 \dots \textcircled{ii}$$

$$\Rightarrow x = 18 + y \dots \textcircled{iii}$$

Sub. value of x from \textcircled{iii} in \textcircled{i}

$$18 + y + y = 180$$

$$\Rightarrow 2y = 162$$

$$\Rightarrow y = \frac{162}{2} = 81$$

$$\Rightarrow y = 81$$

Sub. value of y in \textcircled{iii}

$$x = 18 + 81$$

$$= 99$$

\therefore angles are $81^\circ, 99^\circ$

3(iii)

let cost of 1 bat = Rs x

cost of 1 ball = Rs y

acc. to condition I

$$7x + 6y = 3800 \dots \textcircled{i}$$

acc. to condition II

$$3x + 5y = 1750 \dots \textcircled{ii}$$

$$\Rightarrow x = \frac{1750 - 5y}{3} \dots \textcircled{iii}$$

Sub. in \textcircled{i}

$$7\left(\frac{1750 - 5y}{3}\right) + 6y = 3800$$

(x3)

$$7 \times 7\left(\frac{1750 - 5y}{3}\right) + 6y \times 3 = 3800 \times 3$$

$$\Rightarrow -35y + 18y = 11400 - 12250$$

$$\Rightarrow -17y = -850$$

$$\Rightarrow y = 50$$

Sub in \textcircled{iii}

$$x = \frac{1750 - 5 \times 50}{3}$$

$$= \frac{1750 - 250}{3}$$

$$= \frac{1500}{3}$$

$$= 500$$

\therefore cost of 1 bat = Rs 500

cost of 1 ball = Rs 50