



Exercise 10A

$$\frac{1}{8}x = 1080 - x$$

$$\Rightarrow x = 8640 - 8x$$

$$\Rightarrow 9x = 8640$$

$$\Rightarrow x = 960$$

$$\therefore \text{CP} = \text{Rs. } 960$$

$$\text{Now, gain} = \frac{1}{8}x$$

$$= \frac{960}{8}$$

$$= \text{Rs. } 120$$

$$\therefore \text{Gain percentage} = \left(\frac{120}{960} \times 100 \right) \%$$

$$= 12 \frac{1}{2} \%$$

Q17.

Answer :

SP of the pen = Rs. 54

Let Rs x be the CP of the pen.

$$\text{Loss} = \text{Rs. } \frac{x}{10}$$

$$\text{SP} = \text{CP} - \text{Loss}$$

$$= x - \frac{x}{10}$$

$$= \text{Rs. } \frac{9x}{10}$$

$$\text{Now, we have } \frac{9x}{10} = 54$$

$$\Rightarrow x = 54 \times \frac{10}{9}$$

$$\Rightarrow x = 60$$

$$\therefore \text{CP of the pen} = \text{Rs. } 60$$

$$\text{Now, loss} = \frac{x}{10}$$

$$= \frac{60}{10}$$

$$= \text{Rs. } 6$$

$$\therefore \text{ Loss percentage} = \left(\frac{\text{loss}}{\text{CP}} \times 100 \right) \%$$

$$= \left(\frac{6}{60} \times 100 \right) \%$$

$$= 10\%$$

Q18.

Answer :

Let *Rs x* be the CP of the table.

Case I :

$$\text{Loss percentage} = 10\%$$

$$\Rightarrow \text{Loss } \% = \left(\frac{\text{loss}}{\text{CP}} \times 100 \right) \%$$

$$\Rightarrow 10 = \frac{\text{loss}}{x} \times 100$$

$$\Rightarrow \frac{\text{Loss}}{x} = \frac{1}{10}$$

$$\Rightarrow \text{Loss} = \text{Rs } \frac{x}{10}$$

Suppose that SP_1 is the selling price when he incurs a loss of 10%.

$$\text{Loss} = \text{Rs } \frac{x}{10}$$

$$\Rightarrow \text{CP} - SP_1 = \frac{x}{10}$$

$$\Rightarrow SP_1 = x - \frac{x}{10}$$

$$= \text{Rs } \frac{9x}{10}$$

Case II :

$$\text{Gain percentage} = 10\%$$

$$\Rightarrow \text{Gain } \% = \left(\frac{\text{gain}}{\text{CP}} \times 100 \right) \%$$

$$\Rightarrow 10 = \frac{\text{gain}}{x} \times 100$$

$$\Rightarrow \frac{\text{Gain}}{x} = \frac{1}{10}$$

$$\Rightarrow \text{Gain} = \text{Rs } \frac{x}{10}$$

Suppose that SP_2 is the selling price when he makes gain of 10%.

Q19.

Answer :

Let Rs x be the CP.

$$\text{Gain}_1 \text{ percentage} = \left(\frac{\text{gain}_1}{\text{CP}} \times 100 \right) \%$$

$$\Rightarrow 15 = \frac{\text{gain}_1}{x} \times 100$$

$$\Rightarrow \text{Gain}_1 = \text{Rs } \frac{15x}{100}$$

$$\text{Again, gain}_2 \text{ percentage} = \left(\frac{\text{gain}_2}{\text{CP}} \times 100 \right) \%$$

$$\Rightarrow 8 = \frac{\text{gain}_2}{x} \times 100$$

$$\Rightarrow \text{Gain}_2 = \text{Rs } \frac{8x}{100}$$

According to the question, we have :

$$\text{Gain}_1 - \text{gain}_2 = 56$$

$$\Rightarrow \frac{15x}{100} - \frac{8x}{100} = 56$$

$$\Rightarrow \frac{7x}{100} = 56$$

$$\Rightarrow 7x = 5600$$

$$\Rightarrow x = 800$$

Hence, the CP of the chair is Rs 800.

Q20.

Answer :

Let the cost price of the cycle be Rs x .

$$\text{SP of the cycle at 10\% gain} = \text{Rs } \left\{ \frac{100 + \text{gain \%}}{100} \times \text{CP} \right\}$$

$$= \text{Rs } \left\{ \frac{100+10}{100} \times x \right\}$$

$$= \text{Rs } \left\{ \frac{110x}{100} \right\}$$

$$= \text{Rs. } \frac{11x}{10}$$

$$\text{SP of the cycle at 14\% gain} = \text{Rs } \left\{ \frac{100+14}{100} \times x \right\}$$

$$= \text{Rs } \left\{ \frac{114x}{100} \right\}$$

$$= \text{Rs } \left\{ \frac{57x}{50} \right\}$$

$$\therefore \frac{57x}{50} - \frac{11x}{10} = 65$$

$$\Rightarrow \left(\frac{57x}{50} - \frac{55x}{50} \right) = 65$$

$$\Rightarrow \frac{57x-55x}{50} = 65$$

$$\Rightarrow \frac{2x}{50} = 65$$

$$\Rightarrow 2x = 3250$$

$$\Rightarrow x = 1625$$

Therefore, the cost price of the cycle is Rs 1625.

Q21.

Answer :

CP of the first variety of wheat = Rs 40×6.25 = **Rs. 250**

CP of second variety of wheat = Rs 30×7 = **Rs. 210**

Total CP = Rs (250 + 210)

= Rs 460

Total amount of wheat = (40 + 30) kg

= 70 kg

Now, **gain percentage** = $\frac{\text{gain}}{\text{CP}} \times 100$

$$\Rightarrow \text{Gain} = \frac{(\text{gain \%}) \times \text{CP}}{100}$$

$$\Rightarrow \text{Gain} = \frac{460 \times 5}{100}$$

$$= \text{Rs } 23$$

$$\therefore \text{SP} = \text{CP} + \text{gain}$$

$$= 460 + 23$$

$$= \text{Rs } 483$$

$$\therefore \text{Rate per kg} = \text{Rs } \frac{483}{70} = \text{Rs } 6.9$$

Q22.

Answer :

CP of the first bat = Rs 560

Gain percentage = 15%

$$\text{SP of the first bat} = \text{Rs } \left\{ \frac{100 + \text{gain \%}}{100} \times \text{CP} \right\}$$

$$= \text{Rs } \left\{ \frac{100 + 15}{100} \times 560 \right\}$$

$$= \text{Rs } \left\{ \frac{115}{100} \times 560 \right\}$$

$$= \text{Rs } 644$$

CP of the second bat = Rs 240

Loss percentage = 5%

$$\text{SP of the second bat} = \text{Rs } \left\{ \frac{100 - \text{loss \%}}{100} \times \text{CP} \right\}$$

$$= \text{Rs } \left\{ \frac{100 - 5}{100} \times 240 \right\}$$

$$= \text{Rs } \left\{ \frac{95}{100} \times 240 \right\}$$

$$= \text{Rs } 228$$

Total CP of the two bats = Rs (560 + 240) = Rs 800

Total SP of the two bats = Rs (644 + 228) = Rs 872

Since SP > CP, there is gain in the whole transaction.

***** END *****

