



Exercise 10A

Let Rs x be the SP of each bottle and Rs y be the CP of each bottle.

SP of 16 bottles = CP of 17 bottles

$$\Rightarrow 16x = 17y$$

$$\Rightarrow \frac{x}{y} = \frac{17}{16}$$

Gain per bottle = SP – CP

$$= \text{Rs } (x - y)$$

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

$$= \left(\frac{x-y}{y} \times 100 \right) \%$$

$$= \left\{ \left(\frac{x}{y} - 1 \right) \times 100 \right\} \%$$

$$= \left\{ \left(\frac{17}{16} - 1 \right) \times 100 \right\} \%$$

$$= \left(\frac{1}{16} \times 100 \right) \%$$

$$= 6 \frac{1}{4} \%$$

Q9.

Answer :

Let Rs x be the CP of one candle and Rs. y be the SP of one candle.

Now, CP of 12 candles = SP of 15 candles

$$\Rightarrow 12x = 15y$$

$$\Rightarrow \frac{y}{x} = \frac{12}{15}$$

Loss = CP – SP

$$= \text{Rs } (x - y)$$

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

$$= \left\{ \left(\frac{x-y}{x} \right) \times 100 \right\} \%$$

$$= \left\{ \left(1 - \frac{y}{x} \right) \times 100 \right\} \%$$

$$= \left\{ \left(1 - \frac{12}{15} \right) \times 100 \right\} \%$$

$$= \left(\frac{3}{15} \times 100 \right) \%$$

$$= 20\%$$

Q10.

Answer :

Let Rs x be the SP of one cassette.

SP of 5 cassettes = Rs. $5x$

SP of 125 cassettes = Rs. $125x$

Gain = Rs. $5x$, when SP = Rs. $125x$

But gain = SP – CP

\Rightarrow CP = SP – gain

= $125x - 5x$

= Rs. $120x$

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

= $\left(\frac{5x}{120x} \times 100\right)\%$

= $4\frac{1}{6}\%$

Q11.

Answer :

Let Rs x be the SP of one lemon.

SP of 45 lemons = Rs. $45x$

Loss = SP of 3 lemons = Rs. $3x$

But loss = CP – SP

CP = loss + SP

= $3x + 45x$

= Rs. $48x$

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

= $\left(\frac{3x}{48x} \times 100\right)\%$

= $6\frac{1}{4}\%$

Q12.

Answer :

CP of 6 oranges = Rs. 10

CP of 1 orange = $\frac{10}{6}$ = Rs. $\frac{5}{3}$

SP of 4 oranges = Rs. 9

SP of 1 orange = Rs. $\frac{9}{4}$

Since $SP > CP$, there is a gain.

Now, gain = $SP - CP$

$$\begin{aligned} &= \frac{9}{4} - \frac{5}{3} \\ &= \text{Rs. } \frac{7}{12} \end{aligned}$$

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

$$\begin{aligned} &= \left(\frac{\frac{7}{12}}{\frac{5}{3}} \times 100 \right) \% \\ &= \left(\frac{7}{12} \times \frac{3}{5} \times 100 \right) \% \\ &= \left(\frac{7}{4} \times 20 \right) \% \\ &= 35\% \end{aligned}$$

Q13.

Answer :

SP of 10 bananas = Rs. 18

SP of 1 banana = $\frac{18}{10} = \text{Rs. } \frac{9}{5}$

CP of 12 bananas = Rs. 16

CP of 1 banana = Rs. $\frac{16}{12} = \text{Rs. } \frac{4}{3}$

Since $SP > CP$, there is a gain.

Now, gain = $SP - CP$

$$\begin{aligned} &= \frac{9}{5} - \frac{4}{3} \\ &= \text{Rs. } \frac{7}{15} \end{aligned}$$

$$\therefore \text{Gain percentage} = \left(\frac{\frac{7}{15}}{\frac{4}{3}} \times 100 \right) \%$$

$$\begin{aligned} &= \left(\frac{7}{15} \times \frac{3}{4} \times 100 \right) \% \\ &= 35\% \end{aligned}$$

Q14.

Answer :

CP of 10 apples = Rs. 25

SP of 12 apples = Rs. 25

SP of 10 apples = Rs $\frac{25}{12} \times 10 = \text{Rs. } \frac{125}{6}$

Since $SP < CP$, there is a loss.

Now, loss = CP – SP

$$= \text{Rs. } 25 - \frac{125}{6}$$

$$= \text{Rs. } \frac{25}{6}$$

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

$$= \left(\frac{\frac{25}{6}}{25} \times 100 \right) \%$$

$$= 16.67\%$$

Q15.

Answer :

Let x be number of eggs he purchased.

CP of 3 eggs = Rs. 5

CP of x eggs = Rs. $\frac{5}{3} x$

SP of 5 eggs = 12

SP of x eggs = $\frac{12}{5} x$

\therefore Gain = SP – CP

$$= \frac{12}{5} x - \frac{5}{3} x$$

$$= \text{Rs. } \frac{11}{15} x$$

$$\text{Now, } \frac{11}{15} x = 143$$

$$\Rightarrow x = 143 \div \frac{11}{15}$$

$$\Rightarrow x = 143 \times \frac{15}{11} \Rightarrow x = 195$$

Q16.

Answer :

SP of the camera = Rs. 1080

Let Rs x be the CP.

$$\text{Gain} = \text{Rs. } \frac{1}{8} x \quad \dots (i)$$

$$\text{Also, gain} = \text{SP} - \text{CP}$$

$$= \text{Rs. } (1080 - x) \quad \dots (ii)$$

From (i) and (ii), we have :

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