

RD Sharma
Solutions

Class 7

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Chapter-12Profit and LossExercise 12.1

Q.1 Given the following values, find the unknown values.

(i) $CP = \text{Rs. } 1200$, $SP = \text{Rs } 1350$ Profit/Loss ?

(ii) $CP = \text{Rs } 980$, $SP = \text{Rs. } 940$ Profit/Loss ?

(iii) $CP = \text{Rs } 720$, $SP = ?$ Profit = Rs 55.50

(iv) $CP = ?$ $SP = \text{Rs } 1254$, Loss = Rs 32

Solution: (i) $CP = \text{Rs } 1200$, $SP = \text{Rs } 1350$

$$\therefore SP > CP$$

$$\therefore \text{Profit} = SP - CP$$

$$= 1350 - 1200 = \text{Rs. } 150$$

(ii) $CP = \text{Rs } 980$, $SP = \text{Rs } 940$

$$\therefore CP > SP$$

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

$$= 980 - 940 = \text{Rs } 40$$

(iii) $CP = \text{Rs } 720$, $SP = ?$ Profit = Rs 55.50

$$\therefore SP - CP = \text{Profit}$$

$$\Rightarrow SP = CP + \text{Profit}$$

$$= 720 + 55 - 50$$

$$= \text{Rs. } 775 - 50$$

(11) $CP = ?$ $SP = \text{Rs } 1254$, $\text{Loss} = \text{Rs } 32$

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

$$\Rightarrow CP = \text{Loss} + SP$$

$$= 1254 + 32 = \text{Rs } 1286$$

Q.2 Fill in the blanks in each of the following

(1) $CP = \text{Rs } 1265$, $SP = \text{Rs } 1253$, $\text{Loss} = \text{Rs } \dots$

Solution:

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

$$= \text{Rs } 1265 - \text{Rs } 1253$$

$$= \text{Rs } 12$$

(11) $CP = \text{Rs } \dots$, $SP = \text{Rs } 450$, $\text{Profit} = \text{Rs } 150$

$$\therefore \text{Profit} = SP - CP$$

$$\Rightarrow CP = SP - \text{Profit}$$

$$= 450 - 150$$

$$= \text{Rs } 300$$

$$(iii) CP = \text{Rs } 3355, SP = \text{Rs } 7355, \dots = \text{Rs } \dots$$

$$\text{here } SP > CP$$

$$\begin{aligned}\therefore \text{Profit} &= SP - CP \\ &= 7355 - 3355 \\ &= \text{Rs } 4000\end{aligned}$$

$$(iv) CP = \text{Rs } \dots, SP = \text{Rs } 2390, \text{Loss} = \text{Rs } 5.50$$

$$\text{Solution: } \therefore \text{Loss} = CP - SP$$

$$\begin{aligned}\Rightarrow CP &= SP + \text{Loss} \\ &= \text{Rs } 2390 + \text{Rs } 5.50 \\ &= \text{Rs } 2395.50\end{aligned}$$

Q.3 Calculate the profit or loss and profit or loss percent in each of the following cases:

$$\text{Soln: (i) } CP = \text{Rs } 4560, SP = \text{Rs } 5000$$

$$\therefore SP > CP$$

$$\begin{aligned}\Rightarrow \text{Profit} &= SP - CP = \text{Rs } 5000 - \text{Rs } 4560 \\ &= \text{Rs } 440\end{aligned}$$

$$\begin{aligned}\text{Profit \%} &= \frac{\text{Profit}}{CP} \times 100 = \frac{440}{4560} \times 100 \\ &= 9.65\%\end{aligned}$$

(ii) $CP = \text{Rs } 2600$ $SP = \text{Rs } 2470$

$\therefore CP > SP$

Then $\text{Loss} = CP - SP$
 $= 2600 - 2470$
 $= \text{Rs } 130$

$\text{Loss \%} = \frac{\text{Loss}}{CP} \times 100$
 $= \frac{130}{2600} \times 100 = 5\%$

(iii) $CP = \text{Rs } 332$, $SP = \text{Rs } 350$

here $SP > CP$

Then $\text{Profit} = SP - CP$
 $= \text{Rs } 350 - \text{Rs } 332$
 $= \text{Rs } 18$

$\therefore \text{Profit \%} = \frac{\text{Profit}}{CP} \times 100 = \frac{18}{332} \times 100$
 $= 5.4\%$

(iv) Given $CP = \text{Rs } 1500$, $SP = \text{Rs } 1500$

Here $SP = CP$

then there is no profit no loss.

Q.4 Find the gain or loss percent, when:

(i) $CP = \text{Rs } 4000$, gain = Rs 40

(ii) $SP = \text{Rs } 1272$, loss = Rs 328

(iii) $SP = \text{Rs } 1820$, gain = Rs 420

Solution: (i) $\text{gain \%} = \frac{\text{gain}}{CP} \times 100 = \frac{40}{4000} \times 100$
 $= 1\%$

(ii) $\text{loss \%} = \frac{\text{loss}}{CP} \times 100 = \frac{\text{Rs } 328}{1600} \times 100$

$\therefore CP = SP + \text{loss} = 28.5\%$
 $= 1272 + 328$
 $= \text{Rs } 1600$

(iii) $SP = \text{Rs } 1820$, gain = Rs 420

$\therefore CP = SP - \text{gain}$
 $= 1820 - 420$
 $= \text{Rs } 1400$

$\text{gain \%} = \frac{\text{gain}}{CP} \times 100$

$= \frac{420}{1400} \times 100 = 30\%$

Q.5 Find the gain or loss percent, when:

(i) CP = Rs 2300, overhead expenses = Rs 300, gain = Rs. 260

(ii) CP = Rs 3500, overhead expenses = Rs. 150, loss = Rs 146.

Solution (i) $\therefore$ CP = Rs 2300

Overhead expenses = Rs 300

Therefore overall C.P = Rs 2300 + Rs 300 = Rs. 2600

gain = Rs. 260

$$\therefore \text{gain \%} = \frac{\text{gain}}{\text{CP}} \times 100 = \frac{260}{2600} \times 100$$

$$= 10\%$$

(ii) CP = Rs 3500, overhead expenses = Rs. 150

$$\therefore \text{overall CP} = 3500 + 150$$

$$= 3650$$

loss = Rs 146

$$\text{loss \%} = \frac{\text{loss}}{\text{CP}} \times 100 = \frac{146}{3650} \times 100$$

$$= \frac{2}{50} \times 100 = 4\%$$

Q.6 A grain merchant sold 600 quintals of rice at a profit of 7%. If a quintal of rice cost him Rs. 250 and his total overhead charges for transportation etc. were Rs 1000. Find his total profit and selling price of 600 quintals of rice.

Solution: Given, Cost of 1 quintal rice = Rs 250

$$\therefore \text{Cost of 600 quintals of rice} = \text{Rs } 250 \times 600 \\ = \text{Rs. } 150000$$

$$\text{Overhead expenses} = \text{Rs. } 1000$$

$$\therefore \text{Overall CP} = \text{Rs } 150000 + \text{Rs } 1000 \\ = \text{Rs } 1,51,000$$

$$\text{Profit} = 7\%$$

$$= \frac{7}{100} \times 151000 = \text{Rs } 10570$$

$$\text{Now SP} = \text{Rs. } (151000 + 10570) \\ = \text{Rs. } 161570$$

Q.7 Nareesh bought 4 dozen pencils at Rs 10.80 a dozen and sold them for 80 paise each. Find his gain or loss percent.

Sol: Cost of 4 dozen (48 pencils) at Rs 10.80 per dozen

$$= 4 \times 10.80$$

$$= \text{Rs } 43.20$$

$$\begin{aligned}
 \text{S.p of 48 pencils at 80 paise each} &= 48 \times 80 \text{ paise} \\
 &= 3840 \text{ Paise} \\
 &= \text{Rs } 38.40
 \end{aligned}$$

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

$$\text{Rs } 43.20 - 38.40 = \text{Rs } 4.8$$

$$\begin{aligned}
 \text{Loss \%} &= \frac{\text{Loss}}{\text{CP}} \times 100 = \frac{4.8}{43.20} \times 100 \\
 &= 11.11\%
 \end{aligned}$$

Q.8 A vendor buys oranges at Rs 26 per dozen and sells them at 5 for Rs. 13. Find his gain percent.

Solution: Given CP of 1 dozen oranges = Rs. 26.

$$\text{CP of 1 oranges} = \text{Rs. } \frac{26}{12} = \text{Rs } 2.16$$

$$\begin{aligned}
 \text{CP of 5 oranges} &= 2.16 \times 5 \\
 &= \text{Rs } 10.8
 \end{aligned}$$

$$\text{also SP of 5 oranges} = \text{Rs. } 13$$

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

$$= 13 - 10.8 = \text{Rs } 2.2$$

$$\text{Gain \%} = \frac{\text{Gain}}{\text{CP}} \times 100 = \frac{2.2}{10.8} \times 100 = 20.3\%$$

Q.9 Mr. Virmani purchased a house for Rs 365000 and spent Rs 135000 on its repairs. If he sold it for Rs 550000. Find his gain percent.

Solution: CP of house = Rs. 365000

Amount Spent on Repair = Rs 135000

$$\begin{aligned}\text{Total CP} &= \text{Rs. } (365000 + 135000) \\ &= \text{Rs. } 500000\end{aligned}$$

$$\therefore \text{SP of house} = 550000$$

$$\begin{aligned}\text{gain} &= \text{SP} - \text{CP} \\ &= 550000 - 500000 \\ &= \text{Rs. } 50000\end{aligned}$$

$$\begin{aligned}\therefore \text{gain \%} &= \frac{\text{gain}}{\text{CP}} \times 100 = \frac{50000}{500000} \times 100 \\ &= 10\%\end{aligned}$$

Q.10 Shikha purchased a wrist watch for Rs 840 and sold it to her friend Vidhi for Rs. 910. Find her gain percent.

Solution: CP of watch = Rs. 840

SP of watch = Rs. 910

$$\therefore \text{Profit} = \text{Rs } (910 - 840) = \text{Rs. } 70$$

$$\text{Profit} = \frac{\text{Profit \%}}{\text{CP}} \times 100 = \frac{70}{840} \times 100 = 8.3\%$$

Q.11 A Business man makes a 10% profit by selling a toy costing him Rs. 120. What is the selling price.

Solution: Cost price of toy = Rs. 120

$$\text{Profit} = 10\% \text{ of } 120$$

$$= \frac{10}{100} \times 120 = \text{Rs } 12$$

$$\text{SP} = \text{CP} + \text{Profit}$$

$$= 120 + 12 = \text{Rs } 132$$

Q.12 Harish purchased 50 dozens bananas for Rs. 135. Five dozen bananas could not be sold because they were rotten. At what price per dozen should Harish sell the remaining bananas so that he makes a profit of 20%?

Solution Cost price of 50 dozen bananas = Rs. 135

Rotten bananas = 5 dozen

$$\text{Bananas left} = 50 - 5 = 45 \text{ dozens}$$

$$\text{Profit} = 20\% \text{ of Rs } 135 = \frac{20}{100} \times 135 = \text{Rs } 27$$

$$\therefore \text{SP of 45 dozen bananas} = \text{Rs } (135 + 27) = \text{Rs } 162$$

$$\therefore \text{SP of 1 dozen bananas} = \text{Rs. } \frac{162}{45} \\ = \text{Rs. } 36$$

Q.13 A woman bought 50 dozen eggs at Rs 6.40 a dozen. out of these 20 eggs were found to be broken. She sold the remaining eggs at 55 paise per egg. Find her gain or loss percent.

Solution: Cost of 50 dozen eggs = $50 \times 6.40 = \text{Rs. } 320$

$$50 \text{ dozen eggs} = 50 \times 12 = 600 \text{ eggs}$$

$$\text{broken eggs} = 20$$

$$\text{No. of eggs left} = 600 - 20 = 580$$

$$\therefore \text{SP of 1 egg} = 55 \text{ paise} = \text{Rs } 0.55$$

$$\therefore \text{SP of 580 eggs} = 580 \times 0.55 = \text{Rs } 319$$

$$\begin{aligned} \text{Now Loss} &= \text{CP} - \text{SP} \\ &= 320 - 319 = \text{Rs } 1 \end{aligned}$$

$$\text{Loss \%} = \frac{\text{Loss}}{\text{CP}} \times 100 = \frac{1}{320} \times 100 = 0.31\%$$

Q.14 Igotsama bought 400 eggs at Rs 8.40 a dozen. At what price per hundred must she sell them so as to earn a profit of 15%.

Solution: cost of eggs per dozen = Rs. 8.40

$$\therefore \text{cost of 1 egg} = \frac{8.40}{12} = 0.7$$

$$\text{Cost of 400 eggs} = 400 \times 0.7 = \text{Rs } 280$$

$$\text{overall profit to earn} = 15\% \text{ of } 280$$

$$= \frac{15}{100} \times 280 = \text{Rs } 42$$

$$\therefore \text{SP of 400 eggs} = \text{Rs } 280 + \text{Rs } 42 \\ = \text{Rs. } 322$$

$$\Rightarrow \text{SP of 100 eggs} = \text{Rs. } \frac{322}{4} = \text{Rs. } 80.50$$

Q.15 A shopkeeper makes a profit of 15% by selling a book for Rs. 230. What is the CP and the actual profit?

Solution: Given SP of a book = Rs. 230

$$\text{Profit} = 15\%$$

$$\text{CP} = \frac{100}{100 + \text{Profit}\%} \times \text{SP} = \frac{100}{100 + 15} \times 230$$

$$= \frac{100}{115} \times 230$$

$$= \text{Rs } 200$$

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

$$= 230 - 200 = \text{Rs. } 30$$

Q.16 A bookseller sells all his books at a profit of 10%. If he buys a book from the distributor at Rs. 200. How much does he sell it for?

Solution: CP of book = Rs 200
 Profit = 10% of 200

$$= \frac{10}{100} \times 200 = \text{Rs. } 20$$

Then $SP = CP + \text{Profit}$

$$= 200 + 20$$

$$= \text{Rs. } 220$$

Q.17 A florist buys 100 dozen roses at Rs 2 a dozen. By the time the flowers are delivered, 20 dozen roses are mutilated and are thrown away. At what price should he sell the rest if he needs to make a 20% Profit on his purchase?

Solution: Cost of 1 dozen roses = Rs 2
 no. of flowers purchased = 100 dozen
 $\therefore$ Cost price of 100 dozen flowers = $\text{Rs } 2 \times 100$

$$= \text{Rs. } 200$$

 Mutilated roses = 20 dozens
 roses left = $100 - 20 = 80$ dozens.

$$\text{Profit needed} = 20\% \text{ of } 200$$

$$= \frac{20}{100} \times 200 = \text{Rs } 40$$

$\therefore$ ~~SP of 80~~

$$\therefore \text{SP of 80 dozen shoes} = 200 + 40 \\ = \text{Rs } 240$$

$$\therefore \text{SP of 1 dozen shoes} = \text{Rs. } \frac{240}{80} \\ = \text{Rs. } 3$$

Q. 18 By selling an article for Rs 240, a man makes a profit of 20%. What is his CP? What would his profit percent be if he sold the article for Rs. 275.

Solution: SP of an article = Rs. 240
Profit = 20%.

$$\text{CP} = \frac{100}{100 + P\%} \times \text{SP} = \frac{100}{100 + 20} \times 240 \\ = \frac{100}{120} \times 240 = \text{Rs. } 200$$

∴ since SP of article = Rs. 275

$$\text{Profit} = \text{SP} - \text{CP} = \text{Rs } 275 - \text{Rs } 200 \\ = \text{Rs } 75$$

$$\text{Profit \%} = \frac{\text{Profit}}{\text{CP}} \times 100 = \frac{75}{200} \times 100 \\ = 37\frac{1}{2}\% = 37.5\%$$