

Profit and  
loss.

28/05/24.

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$$\text{BOOK} = 200 \text{ rs (cost price)}$$

$$100 + 100 = 300 \text{ (selling price)}$$

Selling price = cost price + profit.

$$\% \text{ profit} = \frac{\text{profit rs}}{\text{cost price}} \times 100$$

(never selling rs 0).

BOOK - 550 rs (c.p.)

% profit (10%).

$$\text{formula: } S.P = (100 + \% \text{ profit}) \times c.p.$$

$$S.P = (100 + 10\%) \text{ of } c.p.$$

$$= \frac{110}{100} \times 500 \Rightarrow 550 \text{ rs.}$$

500 rs (c.p.)

do. loss.

$$\text{formula loss} = \frac{\text{loss rs}}{c.p} \times 100$$

$$S.P = (100 - \% \text{ loss}) \times c.p.$$

$$= \frac{80}{100} \times 500 \Rightarrow 400 \text{ rs.}$$

1) Ajay loss do. total profit 2880. To get a profit of 10% what should be the price?

$$S.P = 2880.$$

$$= (100 - \% \text{ loss}) \times c.p.$$

$$2880 = \frac{80}{100} \times c.p.$$

$$c.p = \frac{2880 \times 100}{80}$$

$$= 3600.$$

$$= 3600.$$

$$S.P = \frac{P}{C.P} \times 100$$

$$L = \frac{P}{C.P} \times 100$$

$$S.P = (100 + P) \times C.P.$$

$$S.P = (100 - P) \times C.P.$$

need 20% profit  
120

$$S.P = (100+20) \times C.P.$$

$$= \frac{120}{100} \times 3600$$

$$= 120 \times 36 \Rightarrow \text{₹}4320 \text{ to get 20% profit}$$

d) do paper planes for ₹1

20% of profit: how many planes did he buy, if

1 rupee?

$$S.P = 100(20\% \text{ profit})$$

$$= (100+20) \times C.P.$$

$$1 = \frac{120}{100} \times C.P.$$

$$C.P = \frac{100}{120}$$

$$\text{so } \rightarrow 100/120 \text{ ₹}$$

? ← 1 plan ₹1

$$20\% = ? \times \frac{100}{120} \Rightarrow ? \times \frac{160}{120}$$

$$? = \frac{4 \times 20}{5}$$

$$\frac{1}{?} = \frac{5}{120}$$

3) want 20% of profit

? = 120/5 ⇒ 24 planes for 1 rupee.

120kg of sugar at ₹4/kg

180kg of sugar at ₹2/kg,

Profit of sugar mix = ?

$$C.P = 120 \times 4 + 180 \times 2$$

$$= 2880 + 3600$$

$$= 7920 \text{ rs.}$$

$$S.P = (100 + 15) \times C.P.$$

$$\begin{aligned}
 &= \frac{115}{100} \times 7920 \\
 &= \frac{23}{100} \times 7920^{\frac{23}{100}} \\
 &= 9108 \text{ rs.}
 \end{aligned}$$

4) 4 oranges per rupee  $\rightarrow \frac{1}{4}$  (one orange)

5 oranges per rupee  $\rightarrow \frac{1}{5}$  (one orange)

$$171 = \frac{1}{4} + \frac{1}{5} = \frac{9}{20}$$

Combine into one basket

$$\boxed{S.P - C.P = \text{Profit}}$$

$$= \frac{9}{20} \Rightarrow 9/40 (\text{1 orange})$$

4 orange per rupee =  $\frac{1}{4}$  (one orange)  
(cells)

$$\begin{aligned}
 &= \frac{1}{4} - \frac{9}{40} \\
 &= \frac{1}{40} \text{ rs.}
 \end{aligned}$$

$$\text{Profit} = \frac{S.P - C.P}{C.P} \times 100$$

$$= \frac{1/40}{9/40} \times 100$$

$$= 100/9 = 11 \frac{1}{9} \times \frac{100}{9} = 111.11\bar{1}$$

5) profit 20%  $\rightarrow$  1st  
loss - 20%  $\rightarrow$  2nd  
2 cycles  $\rightarrow 4000 \text{ Rs. } (\text{profit or loss})$

Same profit

(20%)

same loss

(20%)

$\downarrow$  loss.

$$\frac{a^2}{100} = \frac{(20)^2}{100}$$

$$= \frac{400}{100} \Rightarrow 4\%$$

6) Food  $\rightarrow$  56000. Sold  $\frac{1}{3}$ rd of it incurring a loss of 40.  
 What profit she must earn on rest of the supplies  
 to nullify loss?

1	2	3
40% loss	20%	20%.

$$\frac{40\%}{2} = 20 \quad \text{Profit} \rightarrow \text{Original Cost}$$

$$\frac{20\%}{2} = 10 \quad \text{Profit} \rightarrow \text{Original Cost}$$

7) A sold a car to B at a profit of 25%. B incurred loss of 15% while selling the same car to C.  
 At what price did A spend Rs. 50000 for this car?  
 C buy it?

$$\begin{array}{lll} A & B & C \\ \frac{CP}{SP} & \frac{CP}{SP} & \frac{C}{SP} - \frac{1}{P} = \end{array}$$

$$\frac{1}{1.25} =$$

$$0.8 \times \frac{9-2}{9} = 0.6 =$$

$$SP \text{ of } A = (125)\% \text{ of } 50000. \quad \frac{125}{100} \times 50000 =$$

$$= \frac{125}{100} \times 50000 = 62500$$

$$= 62500.$$

$$SP \text{ of } B = (100-15)\% \text{ of } 62500.$$

$$= \frac{85}{100} \times 62500$$

$$= 53125.$$

9) A cheater manipulated his machine so that it shows 1kg for 970 grams. profit %?

1kg  $\rightarrow$  970 gram.

$$\% \text{ profit} = \frac{30}{970} \times 100 \Rightarrow \frac{300}{97} \Rightarrow 3 \frac{1}{97}\%$$

10) profit  $\rightarrow$  11.5%. he sold it for 8100 more. his profit is 38.5%. What price did he buy the car.

$$11.5 \rightarrow 38.5\%$$

$$= 38.5 - 11.5\%$$

$$= 27\%$$

$$\frac{27}{100} \times CP = 8100$$

$$CP = \frac{8100 \times 100}{27}$$

$$CP = 30000.$$

$$(C-P) \times 100 = 38.5\%$$

$$C-P = 8085$$

$$8085 = P$$

11) man sells 40 fans at 10% profit. Total 20%.

profit in entire sales, he got 160 fans at rate of 100. what profit must be selling the remaining fans?

$$160 \text{ fans} \rightarrow 85100 \text{ each}$$

$$40 \text{ fans} \rightarrow 10\% \quad \left. \right\} 20\%$$

$$120 \text{ fans} \rightarrow ?$$

$$\% p = \frac{\text{Profit}/\text{Rate}}{C-P} \times 100$$

$$10 = \frac{\text{Profit}/(2)}{40 \times 100} \times 100$$

$$\text{Total price} = \frac{\text{Profit}}{40 \text{ fans}} + \frac{\text{Profit}}{120 \text{ fans}} \quad \text{Profit}(2) = 400.$$

$$= 400\%$$

160 tans.

$$20\% = \frac{\text{profit}(F)}{160 \times 100} \times 100$$

$$\frac{\text{I.P.}}{\text{C.P.}} = \frac{\text{profit}(Z)}{100} \times 100$$

$$\frac{\text{profit}}{(Z)} = 3200 \times \frac{100}{160} = 200 \times \frac{32}{8} = 3200$$

120 tans.

$$\text{percentage} = \frac{\text{profit}(Z)}{120 \times 100} \times 100$$

$$120 \times \text{percentage} = \text{profit}(Z)$$

$$3200 = 400 + (20 \times A)$$

$$2800 = 120 \times A$$

$$A = \frac{2800}{120}$$

$$A = 23.33$$

- 11) He bought a statue for 2000/- and sold it for 25% higher than the original price. At what profit % did he sell it?

Profit = 25%. Original price = ?

125% C.Sell

20% C.discount  
 $\frac{80}{100} \times \text{original price}$

$$\text{Profit} = 125 - 80$$

25%

$$25\% = \frac{45}{100} \text{ ap.}$$

$$\frac{200 \times 100}{99} = 4500$$

$\frac{45}{99}$

225

7

22:13

12) 15% profit for selling a book at 20% discount price.  
ratio of cost price and printed price.

$$SP = (100 + 15)\% \times CP$$

$$SP = (100 - 20)\% \times PP$$

$$\frac{115}{100} \times CP = \frac{80}{100} \times PP$$

$$\frac{CP}{PP} = \frac{80}{115} \quad 16:23$$

13) Cost price : selling price  
4 : 5

Profit percentage = ?

$$\text{Profit} = 5 - 4$$

$$= 1$$

$$= \frac{1}{4} \times 100$$

$$= 25\%$$

14) Selling price of 40 articles is equal to cost of 50 articles. The loss (or) gain percentage is?

$$CP(50) = SP(40)$$

$$CP \text{ of } 50 \text{ Article} = 100$$

$$1A = 100/50 \Rightarrow 2$$

$$SP \text{ of } 40 \text{ Article} = 100$$

$$SA = 100/40 \\ = 2.5$$

$$\text{Profit} = 2.5 - 2 \\ = 0.5$$

$$\% = \frac{0.5}{2} \times 100 \\ = \frac{5}{20} \times 100 \\ = 25\%$$

15) 2 lemons for a rupee and sells 5 lemons for three rupee

percentage = ?

$$80 = 100.$$

$$2 \times 100 \rightarrow 200 \text{ lemons}.$$

$$95 \times \frac{1}{(21+00)} = 92$$

$$99 \times \frac{1}{(06-00)} = 92$$

$$5 \rightarrow 3$$

$$200 \rightarrow ?$$

$$5 \times ? = 3 \times 200$$

$$? = 120.$$

$$S.P = 120$$

$$80 \times \frac{08}{21} = 96.2 \times \frac{21}{20}$$

$$\frac{100}{20} = \frac{92}{98}$$

$$\text{Profit} = S.P - C.P.$$

$$= 120 - 100 \Rightarrow 20.$$

Profit % =  $\frac{\text{Profit}}{\text{C.P.}} \times 100$

$$Z : P$$

$$\text{Profit \%} = \frac{20}{100} \times 100$$

$\frac{20}{100} \times 100 = 20\%$

$$N - Z = \text{Profit}$$

$$1 :$$

$$N \times \frac{1}{N} =$$

$$1 : 1$$