

01 Gowri purchased a briefcase with an additional 10% discount on the reduced price after deducting 20% on the labelled price. If the labelled price was Rs. 1400, at what price did she purchase the briefcase ?

$$\begin{aligned} \text{C.P.} &= 90\% \text{ of } 80\% \text{ of Rs. } 1400 \\ &= \text{Rs.} \left(\frac{90}{100} \times \frac{80}{100} \times 1400 \right) \\ &= \text{RS. } 1005 \end{aligned}$$

02 After allowing a discount of 11.11%, trader still makes a gain of 14.28%. At how many percent above the cost price does he mark on his goods ?

Let the C.P. of the goods be Rs. 100

then S.P. at a gain of 14.28% = Rs. 114.28

This S.P. is also arrived after giving a discount of 11.11% on marked price

$$\therefore \text{M.P.} \times 0.8889 = \text{Rs. } 114.28$$

$$\text{or, M.P.} = \text{Rs. } 128.56$$

Therefore, cost price will have to be increased by 28.56%

03 A dealer buys dry fruits at Rs. 100, Rs. 80 and Rs. 60 per kilogram. He mixes them in the ratio 3 : 4 : 5 by weight and sells at profit of 50%. At what price per kilogram does he sell the dry fruit ?

Let he mixes 3 kg, 4 kg and 5 kg of dry fruits at Rs. 100, Rs. 80 and at Rs. 60 per kg respectively. Hence, cost of dry fruits per kg will be

$$= \frac{3 \times 100 + 4 \times 80 + 5 \times 60}{12} = \frac{920}{12}$$

$$\begin{aligned} \text{S.P. at a profit of 50\%} &= \text{Rs. } \frac{920}{12} \times 15 \\ &= \text{Rs. 115 per kg} \end{aligned}$$

04 If selling price is doubled, the profit triples. Find the profit percent.

Let C.P. = Rs. x

\therefore S.P. = Rs. y

Profit = Rs. $(y - x)$

If S.P. = $2y$, then profit = $3(y - x)$

$\therefore 2y - x = 3(y - x) \Rightarrow y = 2x$

\therefore Profit on Rs. x = Rs. x ; i.e., 100 %

05 Instead of walking along two adjacent sides of a rectangular field, a boy took a short cut along the diagonal and saved a distance equal to half the larger side. Find the ratio of the shorter side to the longer side.

Let length be y and breadth be x

$$\text{then, } (x + y) - \sqrt{x^2 + y^2} = \frac{y}{2}$$

$$\text{or } x + \frac{y}{2} = \sqrt{x^2 + y^2}$$

$$\Rightarrow x^2 + xy = x^2 + y^2$$

(squaring on both the sides)

$$\therefore x : y = 3 : 4$$

06 Fresh grapes contain 90% water by weight while dried grapes contain 20% water by weight. What is the weight of dry grapes available from 20 kg of fresh grapes. ?

Fresh grapes contain 10% pulp

\therefore 20 kg fresh grapes contain 2 kg pulp

Dry grapes contain 80% pulp

So, 2 kg pulp would contain

$$\frac{2}{0.8} = 2.5 \text{ kg dry grapes}$$

07 A and B have to write 810 and 900 pages respectively in the same time period. But A completes his work 3 days ahead of time and B completes 6 days ahead of time. How many pages did A write per day if B wrote 21 pages more in each day. ?

- (A) 45 (B) 72 (C) 54 (D) 100

(C) From options

$$\frac{810}{54} = \frac{900}{54 + 21} = 15 - 12 = 3$$

∴ Number of pages written by A in one day = 54
(OR)

Let number of pages written by 'A' in one day be 'x'

$$\text{Given } \frac{810}{x} - \frac{900}{x + 24} = 6 - 3$$

$$\cancel{x} \left(\frac{270}{x} - \frac{300}{x + 21} \right) = \cancel{x}$$

$$\frac{270(x + 21) - 300x}{x(x + 21)} = 1$$

$$270x + 5670 - 300x = x^2 + 21x$$

$$5670 - 30x = x^2 + 21x$$

$$x^2 + 51x - 5670 = 0 \quad x^2 + 51x - 5670 = 0$$

$$x^2 + 105x - 54x - 5670 = 0$$

$$(x + 105)(x - 54)$$

$$x = -105 \text{ (OR) } x = 54$$

∴ Number of pages written by 'A' in one day = 54