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Q: Ali buys an old scooter for Rs. 4700 and spends Rs. 800 on its repairs. If he sells the scooter for Rs. 5800, his gain percent is:

Given:

Cost Price of scooter = Rs. 4700
Repairing cost = Rs. 800
Selling Price = Rs. 5800

To find,

Gain percentage = ?

Solution:-

As Ali buys a scooter and afterwards he also spent some amount on its repairing so,

the total cost 'X' of the scooter will be

$$\begin{aligned} X &= \text{Cost Price} + \text{Repairing Price} \\ &= 4700 + 800 \\ &= \text{Rs. } 5500 \end{aligned}$$

Now, we will calculate gain or profit using this total cost price.

$$\text{Gain} = \text{Selling price} - \text{Cost price (total)}$$

$$= 5800 - 5500$$

$$= \text{Rs } 300$$

$$\therefore \text{Gain} = \text{Rs } 300$$

Using formula for gain percentage, we get-

$$\text{Gain \%} = \frac{\text{Profit / Gain}}{\text{Cost price}} \times 100$$

~~Using~~

Putting values,

$$= \frac{300}{5500} \times 100$$

$$= 5.45\%$$

\therefore The gain percentage on scooter is 5.45%.

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2. The cost price of 20 articles is the same as the selling price of x articles. If the profit is 25%, then the value of x is.

Given:

Cost price of 20 Articles = Selling price of ' x ' articles.

Profit % = 25%

To find,

Value of ' x ' = ?

Solution:

Cost price of each article
∴ Cost price of x articles = Rs. x

Selling price of x articles = Rs. 20

Profit = Rs. $(20 - x)$

$$\therefore \frac{20 - x}{x} \times 100 = 25x$$

$$= 2000 - 100x = 25x$$

$$125x = 2000$$

$$x = 16$$

∴ value of x is 16.

3. If selling price is doubled, the profit triples. Find the profit percentage.

Using hypothetical values, we assume

$$\text{Cost price} = \text{Rs. } 50$$

$$\text{Selling price} = \text{Rs. } 100$$

$$\text{Profit} = 100 - 50 = \text{Rs. } 50$$

Condition = 2x selling price causes 3x profit

Using condition for above values, we get

$$2x \text{ selling price}$$

$$2x \ 100 = 200$$

$$3x \text{ Profit}$$

$$3x \ 50 = 150$$

$$\text{Profit percentage} = \frac{\text{Profit}}{\text{Cost price}} \times 100$$

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$$= \frac{5/6}{5} \times 100$$

$$= 100$$

\therefore profit percentage is 100%

Q.4. A vendor bought toffees at 6 for a rupee. How many for a rupee must he sell to gain 20%?

Given:

Rate of cost price = 6

Gain percentage = 20%

To find:

No. of toffees to be sold = ?

Solution:

Selling price of 6 toffees

$$= 120\% \text{ of } 1$$

$$= \frac{6}{5}$$

For Rs $\frac{6}{5}$, toffees sold = 6

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$$\text{For Rs 1, toffees sold} = \frac{6 \times 5}{6} = 5$$

he must 5 toffees a rupee
to gain 20%

Q.5

A shopkeeper expects a gain of 22.5% on his cost price. If in a week, his sale was of Rs. 392, what was his profit?

Given:

$$\text{Sale} = \text{Rs. } 392$$

$$\text{Expected gain} = 22.5\%$$

To find,

$$\text{Profit} = ?$$

Solution:

Using profit percentage formula
we get,

$$\text{Profit \%} = \frac{\text{Profit}}{\text{selling price}} \times 100$$

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putting values, we get-

$$\frac{22.5}{100} = \frac{\text{Profit}}{392}$$

$$\text{Profit} = \frac{392 \times 22.5}{100}$$

$$\text{Profit} = \text{Rs. } 88.2$$

The profit of the shopkeeper was Rs. 88.2