Comparing Quantities: Exercise 8.2

Q.1 A man got a 10% increase in his salary. If his new salary is Rs. 1,54,000. find his original salary.

Sol. Let x be the original salary.
Since, the new salary = Rs 1,54,000
and increment in the original salary =10%
So, Original Salary + Increment = New Salary

$$x + \frac{10}{100} \times x = 1{,}54{,}000$$

$$\frac{110x}{100} = 1{,}54{,}000$$

$$x = 154000 \times \frac{100}{110}$$

$$x = 1{,}40{,}000$$

Thus, the original salary = Rs. 1,40,000

Q.2 On Sunday 845 people went to the Zoo. On Monday only 169 people went. What is the per cent decrease in the people visiting the Zoo on Monday?

Sol. **Given:** No. of people went to the zoo on Sunday = 845
and No. of people went on Monday = 169
So, decrement in the no of people = 845 – 169 = 676

Percentage decrement = $\frac{676}{845}$ x 100 % = 80 %

Thus, percentage decrease in the people visiting Zoo on Monday = 80%

Q.3 A shopkeeper buys 80 articles for Rs 2,400 and sells them for a profit of 16%. Find the selling price of one article.

Sol. **Given:** 80 articles buy in Rs 2,400

So, amount of one article will be = $\frac{2400}{80}$ = Rs. 30

Also, profit on one article = 16%

So, 16% profit = $\frac{\text{Profit}}{\text{cost of one article}} \text{x}100$

$$16 = \frac{\text{Profit}}{30} \text{x}100$$

$$\text{Profit} = \frac{30}{100} \text{x } 16 = \text{Rs } 4.80$$

Thus, selling price of one article = Cost of one article + Profit
= Rs (30 + 4.80)
= Rs 34.80

Q.4 The cost of an article was Rs 15,500. Rs 450 were spent on its repairs. If it is sold for a profit of 15%, find the selling price of the article.

Sol. Since, total cost of an article = cost of an article + repair

= Rs 15500 + Rs 450

= Rs 15950

So, Profit in percentage = $\frac{\text{Profit}}{\text{total cost of article}} \text{x} 100$

$$15 = \frac{\text{Profit}}{15950} \text{x} 100$$

$$\text{Profit} = \frac{15950 \times 15}{100}$$

= Rs. 2392.50

Therefore, selling price of the article = Cost of article + Profit

= Rs 15950 + Rs 2392.50

= Rs 18342.50

Q.5 A VCR and TV were bought for Rs 8,000 each. The shopkeeper made a loss of 4% on the VCR and a profit of 8% on the TV. Find the gain or loss percent on the whole transaction.

Sol. Since, Cost prize of VCR = Rs 8000 and shopkeeper made a loss of 4% on it.

So, selling prize for VCR = (8000 – 4% of 8000)

$$= 8000 - \frac{4}{100} \text{x } 8000$$

= 8000 – 320

= 7680 Rs.

Now, cost prize of TV = Rs 8000 and shopkeeper made a profit of 8% on it.

So, selling prize for TV = 8000 Rs. + 8% of 8000 Rs.

$$= 8000 \text{ Rs.} + \frac{8}{100} \text{x } 8000$$

= 8000 Rs. + 640

= 8640 Rs.

Now, total selling prize of VCR and TV = Rs 7680 + Rs 8640 = Rs 16320

And total Cost prize of VCR and TV = Rs 8000 + Rs 8000 = Rs 16000

Since, total selling prize is greater than total cost prize. So, shopkeeper made the profit.

So, Profit = Rs 16320 – Rs 16000

= Rs 320

Percentage Profit = $\frac{\text{Profit}}{\text{Cost prize}} \text{x} 100$

$$= \frac{320}{16000} \text{x} 100$$

= 2 %

Thus, the shopkeeper had made a 2% gain on the whole transaction.

Q.6 During a sale, a shop offered a discount of 10% on the marked prices of all the items. What would a customer have to pay for a pair of jeans marked at Rs 1450 and two shirts marked at Rs 850 each?

Sol. **Given:** price of a pair of jeans = Rs. 1450

Price of two shirts = 2 x Rs. 850 = Rs. 1700

So, total marked price = Rs. 1450 + Rs. 1700 = Rs. 3150
Since, discount offered by shop = 10% of Marked prize

Therefore, Discount = Rs. $\frac{10}{100}$ x 3150

= Rs. 315

Now, Discount = Marked price – Sale price

Rs. 315 = Rs. 3150 – Sale Price

So, Sale prize = Rs. (3150 – 315)

= Rs. 2835

Thus, customer have to pay = Rs. 2835

Q.7 A milkman sold two of his buffaloes for Rs 20,000 each. On one he made a gain of 5% and on the other a loss of 10%. Find his overall gain or loss. (Hint: Find CP of each)

Sol. **Given:** Selling prize of first buffalo is Rs 20000 and profit made was 5%.
It means that if cost prize is Rs 100, then Selling prize is Rs 105

So, cost prize of first buffalo = $20000 \times \frac{100}{105}$

= Rs 19,047.62

Now, selling prize of second buffalo is Rs 20000 and loss made was 10%.
It means that if cost prize is Rs 100, then selling prize is Rs 90.

So, cost prize of second buffalo = $20000 \times \frac{100}{90}$ = Rs. 22,222.22

Total cost prize of both buffaloes = Rs 19047.62 + Rs 22222.22

= Rs 41,269.84

And total selling prize of both buffaloes = Rs 20000 + Rs 20000

= Rs 40000

Since, total cost prize is greater than total selling prize. It means that there is loss made.
So, Loss made = Rs 41269.84 – Rs 40000

= Rs 1269.84

Thus, overall loss of milkman = Rs 1,269.84

Q.8 The price of a TV is Rs 13,000. The sales tax charged on it is at the rate of 12%. Find the amount that Vinod will have to pay if he buys it.

Sol. **Given:** Prize of a TV = Rs. 13000
And sales tax charged on TV = 12%.

So, tax to be paid on TV = $\frac{12}{100}$ x 13000 = Rs 1,560

Thus, required amount = Cost Prize + Tax

= Rs 13000 + Rs 1560

= Rs 14,560

Thus, Vinod will have to pay for Tv = Rs 14,560

Q.9 Arun bought a pair of skates at a sale where the discount given was 20%. If the amount he pays is Rs 1,600, find the marked price.

Sol. Let *x* be the marked price of a pair of skates.

Discount = 20%

Discount in percentage = $\frac{\text{Discount}}{\text{Marked price}} \text{x} 100$

$$20 = \frac{\text{Discount}}{x} \text{x} 100$$

Therefore, Discount = $\frac{20}{100} \text{x}\ x = \frac{1}{5}x$

Since, Discount = Marked Price – Sale Price

$$\frac{1}{5}x = \text{x} - \text{Rs. } 1600$$

$$x - \frac{1}{5}x = \text{Rs. } 1600$$

$$\frac{4}{5}x = \text{Rs. } 1600$$

$$x = 1600 \times \frac{5}{4} = \text{Rs. } 2000$$

Thus, the marked price was = Rs. 2000

Q.10 I purchased a hair-dryer for Rs 5,400 including 8% VAT. Find the price before VAT was added.

***Sol.* Given:** Price of Rs 5400 including 8% VAT.

It means that the price without VAT is Rs 100, then price included VAT will be Rs 108.

So, for price Rs 5400 including VAT,

Original price will be = $\frac{100}{108}$ x 5400 = Rs 5000

Thus, the price of hair-dryer before VAT = Rs 5,000.