

CBSE Class –VIII Mathematics
NCERT Solutions
CHAPTER - 8
Comparing Quantities (Ex. 8.2)

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

Ans. Let original salary be Rs.100.

Therefore New salary i.e., 10% increase

$$= 100 + 10 = \text{Rs.}110$$

∴ New salary is Rs.110, when original salary = Rs.100

$$\therefore \text{New salary is Rs.1, when original salary} = \frac{100}{110}$$

$$\therefore \text{New salary is Rs.1,54,000, when original salary} = \frac{100}{110} \times 154000 = \text{Rs.}1,40,000$$

Hence original salary is Rs. 1,40,000.

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

Ans. On Sunday, people went to the Zoo = 845

On Monday, people went to the Zoo = 169

$$\text{Number of decrease in the people} = 845 - 169 = 676$$

$$\text{Decrease percent} = \frac{676}{845} \times 100 = 80\%$$

Hence decrease in the people visiting the Zoo is 80%.

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.

Ans. No. of articles = 80

Cost Price of articles = Rs. 2,400

And Profit = 16%

∴ Cost price of articles is Rs.100, then selling price = $100 + 16 = \text{Rs.}116$

∴ Cost price of articles is Rs.1, then selling price = $\frac{116}{100}$

∴ Cost price of articles is Rs.2400, then selling price = $\frac{116}{100} \times 2400 = \text{Rs.}2784$

Hence, Selling Price of 80 articles = Rs.2784

Therefore Selling Price of 1 article

$$= \frac{2784}{80} = \text{Rs.}34.80$$

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

Ans. Here, C.P. = Rs.15,500 and Repair cost = Rs.450

Therefore Total Cost Price = $15500 + 450 = \text{Rs.}15,950$

Let C.P. be Rs.100, then S.P. = $100 + 15 = \text{Rs.}115$

∴ When C.P. is Rs.100, then S.P. = Rs.115

∴ When C.P. is Rs.1, then S.P. = $\frac{115}{100}$

∴ When C.P. is Rs.15950, then S.P.

$$= \frac{115}{100} \times 15950 = \text{Rs.}18,342.50$$

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.

Ans. Cost price of VCR = Rs.8000 and Cost price of TV = Rs.8000

Total Cost Price of both articles

$$= \text{Rs.}8000 + \text{Rs.}8000 = \text{Rs.}16,000$$

Now VCR is sold at 4% loss.

Let C.P. of each article be Rs.100, then S.P. of VCR = $100 - 4 = \text{Rs.}96$

∴ When C.P. is Rs.100, then S.P. = Rs.96

$$\therefore \text{When C.P. is Rs.1, then S.P.} = \frac{96}{100}$$

∴ When C.P. is Rs.8000, then S.P.

$$= \frac{96}{100} \times 8000 = \text{Rs.}7,680$$

And TV is sold at 8% profit, then S.P. of TV = $100 + 8 = \text{Rs.}108$

∴ When C.P. is Rs.100, then S.P. = Rs.108

$$\therefore \text{When C.P. is Rs.1, then S.P.} = \frac{108}{100}$$

∴ When C.P. is Rs.8000, then S.P.

$$= \frac{108}{100} \times 8000 = \text{Rs.}8,640$$

Then, Total S.P.

$$= \text{Rs.}7,680 + \text{Rs.}8,640 = \text{Rs.} 16,320$$

Since S.P. > C.P.,

Therefore Profit = S.P. – C.P.

$$= 16320 - 16000 = \text{Rs.}320$$

$$\text{And Profit\%} = \frac{\text{Profit}}{\text{Cost Price}} \times 100$$

$$= \frac{320}{16000} \times 100 = 2\%$$

Therefore, the shopkeeper had a gain of 2% on the whole transaction.

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?

Ans. Rate of discount on all items = 10%

Marked Price of a pair of jeans = Rs.1450 and Marked Price of a shirt = Rs.850

Discount on a pair of jeans

$$= \frac{\text{Rate} \times \text{M.P.}}{100} = \frac{10 \times 1450}{100} = \text{Rs.}145$$

$$\therefore \text{S.P. of a pair of jeans} = \text{Rs.}1450 - \text{Rs.}145 = \text{Rs.}1305$$

Marked Price of two shirts = $2 \times 850 = \text{Rs.}1700$

$$\text{Discount on two shirts} = \frac{\text{Rate} \times \text{M.P.}}{100} = \frac{10 \times 1700}{100} = \text{Rs.}170$$

$$\therefore \text{S.P. of two shirts} = \text{Rs.}1700 - \text{Rs.}170 = \text{Rs.}1530$$

Therefore the customer had to pay = 1305 + 1530

= Discount on a pair of jeans

$$= \frac{\text{Rate} \times \text{M.P.}}{100} = \frac{10 \times 1450}{100}$$

= Rs.145

∴ S.P. of a pair of jeans

$$= \text{Rs.}1450 - \text{Rs.}145 = \text{Rs.}2,835$$

Thus, the customer will have to pay Rs.2,835

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)

Ans. S.P. of each buffalo = Rs.20,000

$$\text{S.P. of two buffaloes} = 20,000 \times 2 = \text{Rs.}40,000$$

One buffalo is sold at 5% gain.

$$\text{Let C.P. be Rs.}100, \text{ then S.P.} = 100 + 5 = \text{Rs.}105$$

∴ When S.P. is Rs.105, then C.P. = Rs.100

$$\therefore \text{When S.P. is Rs.}1, \text{ then C.P.} = \frac{100}{105}$$

∴ When S.P. is Rs.20,000, then C.P.

$$= \frac{100}{105} \times 20000 = \text{Rs.}19,047.62$$

Another buffalo is sold at 10% loss.

$$\text{Let C.P. be Rs.}100, \text{ then S.P.} = 100 - 10 = \text{Rs.}90$$

∴ When S.P. is Rs.90, then C.P. = Rs.100

$$\therefore \text{When S.P. is Rs.1, then C.P.} = \frac{100}{90}$$

$$\therefore \text{When S.P. is Rs.20,000, then C.P.}$$

$$= \frac{100}{90} \times 20000 = \text{Rs.22,222.22}$$

$$\text{Total C.P.} = \text{Rs.19,047.62} + \text{Rs.22,222.22}$$

$$= \text{Rs.41,269.84}$$

$$\text{Since C.P.} > \text{S.P.}$$

Therefore here it is loss.

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

$$= \text{Rs.41,269.84} - \text{Rs. 40,000.00} = \text{Rs.1,269.84}$$

The overall loss of milkman was Rs.1269.84

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.

Ans. C.P. = Rs.13,000 and S.T. rate = 12%

$$\text{Let C.P. be Rs.100, then S.P. for purchaser}$$

$$= 100 + 12 = \text{Rs.112}$$

$$\therefore \text{When C.P. is Rs.100, then S.P.} = \text{Rs.112}$$

$$\therefore \text{When C.P. is Rs.1, then S.P.} = \frac{112}{100}$$

$$\therefore \text{When C.P. is Rs.13,000, then S.P.}$$

$$= \frac{112}{100} \times 13000 = \text{Rs.14,560}$$

He will have to pay Rs.14,560

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.

Ans. S.P. = Rs.1,600 and Rate of discount = 20%

Let M.P. be Rs.100, then S.P. for customer = $100 - 20 = \text{Rs.}80$

∴ When S.P. is Rs.80, then M.P. = Rs.100

∴ When S.P. is Rs.1, then M.P. = $\frac{100}{80}$

∴ When S.P. is Rs.1600, then M.P.

$$= \frac{100}{80} \times 1600 = \text{Rs.}2,000$$

Thus, the marked price was Rs. 2,000

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

Ans. C.P. = Rs.5,400 and Rate of VAT = 8%

Let C.P. without VAT is Rs. 100, then price including VAT = $100 + 8 = \text{Rs.}108$

∴ When price including VAT is Rs.108, then original price = Rs.100

∴ When price including VAT is Rs.1, then original price = $\frac{100}{108}$

∴ When price including VAT is Rs.5400, then original price = $\frac{100}{108} \times 5400 = \text{Rs.}5000$

Thus, the price of Hair Dryer before the addition of VAT was Rs 5000
