



CLASS VIII: Maths
Chapter 7: Comparing Quantities

Questions and Solutions | Exercise 7.1 - NCERT Books

Q 1. Find the ratio of the following:

(a) Speed of a cycle 15 km per hour to the speed of scooter 30 km per hour.

(b) 5 m to 10 km

(c) 50 paise to Rs 5

Answer :

(a) Ratio of the speed of cycle to the speed of scooter $= \frac{15}{30} = 1:2$

(b) Since 1 km = 1000 m,

Required ratio $= \frac{5 \text{ m}}{10 \text{ km}} = \frac{5 \text{ m}}{10 \times 1000 \text{ m}} = 1:2000$

(c) Since Re 1 = 100 paise,

Required ratio $= \frac{50 \text{ paise}}{\text{Rs } 5} = \frac{50 \text{ paise}}{500 \text{ paise}} = 1:10$

Q2 :

Convert the following ratios to percentages.

(a) 3:4 (b) 2:3

Answer :

(a) $3:4 = \frac{3}{4} = \frac{3}{4} \times \frac{100}{100} = \frac{3}{4} \times 100\% = 75\%$



$$(b) \quad 2:3 = \frac{2}{3} = \frac{2}{3} \times \frac{100}{100} = \frac{2}{3} \times 100\% = \frac{200}{3}\%$$

$$= \left(\frac{66 \times 3 + 2}{3} \right)\% = 66\frac{2}{3}\%$$

Q3 :

72% of 25 students are good in mathematics. How many are not good in mathematics?

Answer :

It is given that 72% of 25 students are good in mathematics.

Therefore,

Percentage of students who are not good in mathematics = $(100 - 72)\%$

= 28%

∴ Number of students who are not good in mathematics = $\frac{28}{100} \times 25$

= 7

Thus, 7 students are not good in mathematics.

Q4 :

A football team won 10 matches out of the total number of matches they played. If their win percentage was 40, then how many matches did they play in all?

Answer :

Let the total number of matches played by the team be x .

It is given that the team won 10 matches and the winning percentage of the team was 40%.



Therefore,

$$\frac{40}{100} \times x = 10$$

$$x = 10 \times \frac{100}{40}$$

$$x = 25$$

Thus, the team played 25 matches.

Q5 :

If Chameli had Rs 600 left after spending 75% of her money, how much did she have in the beginning?

Answer :

Let the amount of money which Chameli had in the beginning be x .

It is given that after spending 75% of Rs x , she was left with Rs 600.

Therefore,

$$(100 - 75)\% \text{ of } x = \text{Rs } 600$$

$$\text{Or, } 25 \% \text{ of } x = \text{Rs } 600$$

$$\frac{25}{100} \times x = \text{Rs } 600$$

$$x = \text{Rs } \left(600 \times \frac{100}{25} \right) = \text{Rs } 2400$$

Thus, she had Rs 2400 in the beginning.

Q6 :

If 60% people in city like cricket, 30% like football and the remaining like other games, then what per cent of the people like other games? If the total number of people are 50 lakh, find the exact number who like each type of game.



Answer :

Percentage of people who like other games = $(100 - 60 - 30)\%$

= $(100 - 90)\% = 10\%$

Total number of people = 50 lakh

Therefore, number of people who like cricket = $\left(\frac{60}{100} \times 50\right)$ lakh = 30 lakh

Number of people who like football = $\left(\frac{30}{100} \times 50\right)$ lakh = 15 lakh

Number of people who like other games = $\left(\frac{10}{100} \times 50\right)$ lakh = 5 lakh

Answer :

Questions and Solutions | Exercise 7.2 - NCERT Books

Q 1. 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?

Total marked price = Rs $(1,450 + 2 \times 850)$ = Rs $(1,450 + 1,700)$ = Rs 3,150

Given that, discount % = 10%

Discount = Rs $\left(\frac{10}{100} \times 3150\right)$ = Rs 315

Also, Discount = Marked price - Sale price

Rs 315 = Rs 3150 - Sale price

\therefore Sale price = Rs $(3150 - 315)$ = Rs 2835

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



Q 2. 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,

Answer :

On Rs 100, the tax to be paid = Rs 12

On Rs 13000, the tax to be paid will be $= \text{Rs} \left(\frac{12}{100} \times 13000 \right)$

= Rs 1560

Required amount = Cost + Sales Tax = Rs 13000 + Rs 1560

= Rs 14560

Thus, Vinod will have to pay Rs 14,560 for the T.V.

Q 3. 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.

Answer :

Let the marked price be x .

$$\text{Discount percent} = \frac{\text{Discount}}{\text{Marked price}} \times 100$$

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

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

Also,

Discount = Marked price - Sale price

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

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

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

$$x = \text{Rs} \left(1600 \times \frac{5}{4} \right) = \text{Rs } 2000$$

Thus, the marked price was Rs 2000.



Q 4. I purchased a hair-dryer for Rs 5,400 including 8% VAT. Find the price before VAT was added.

Answer :

The price includes VAT.

Thus, 8% VAT means that if the price without VAT is Rs 100, then price including VAT will be Rs 108.

When price including VAT is Rs 108, original price = Rs 100

$$\begin{aligned}\text{When price including VAT is Rs 5400, original price} &= \text{Rs } \left(\frac{100}{108} \times 5400 \right) \\ &= \text{Rs } 5000\end{aligned}$$

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

Q 5. An article was purchased for 1239 including a GST of 18%. Find the price of the article before GST was added?

Answer:

Let the original price of article excluding GST was 100

After including GST purchased price will be 118

So 118% (including GST) = 1239

$$\begin{aligned}100\% \text{ (excluding GST)} &= 1239 \times (100 / 118) \\ &= 1050\end{aligned}$$

Hence the price of the article before GST was added was 1050.



Questions and Solutions | Exercise 7.3 - NCERT Books

Q 1. The population of a place increased to 54000 in 2003 at a rate of 5% per annum

(i) find the population in 2001

(ii) what would be its population in 2005?

Answer :

(i) It is given that, population in the year 2003 = 54,000

Therefore,

$$54000 = (\text{Population in 2001}) \left(1 + \frac{5}{100}\right)^2$$
$$\text{Population in 2001} = 54000 \times \frac{20}{21} \times \frac{20}{21} = 48979.59$$

Thus, the population in the year 2001 was approximately 48,980.

$$(ii) \text{ Population in 2005} = 54000 \left(1 + \frac{5}{100}\right)^2$$
$$= 54000 \left(1 + \frac{1}{20}\right)^2 = 54000 \times \frac{21}{20} \times \frac{21}{20} = 59,535$$

Thus, the population in the year 2005 would be 59,535.

Q 2. In a laboratory, the count of bacteria in a certain experiment was increasing at the rate of 2.5% per hour. Find the bacteria at the end of 2 hours if the count was initially 5,06,000.

Answer :

The initial count of bacteria is given as 5,06,000.

$$\text{Bacteria at the end of 2 hours} = 506000 \left(1 + \frac{2.5}{100}\right)^2$$



$$\begin{aligned} &= 506000 \left(1 + \frac{1}{40}\right)^2 = 506000 \times \frac{41}{40} \times \frac{41}{40} \\ &= 531616.25 = 5,31,616 \text{ (approx.)} \end{aligned}$$

Thus, the count of bacteria at the end of 2 hours will be 5,31,616 (approx.).

Q 3. A scooter was bought at Rs 42,000. Its value depreciated at the rate of 8% per annum. Find its value after one year.

Answer :

Principal = Cost price of the scooter = Rs 42,000

Depreciation = 8% of Rs 42,000 per year

$$\begin{aligned} &= \text{Rs} \left(\frac{42000 \times 8 \times 1}{100} \right) \\ &= \text{Rs } 3,360 \end{aligned}$$

Value after 1 year = Rs 42000 - Rs 3360 = Rs 38,640