



EXERCISE 10.1

- Express each of the following as fractions in the simplest form :
 - 75%
 - 0.25%
 - $\frac{15}{2}\%$
 - 140%
 - 0.55%
- Express each of the following as a ratio in the simplest form :
 - 12%
 - 0.25%
 - 25%
 - 26%
 - $13\frac{1}{3}\%$
- Express the following as decimals :
 - 125%
 - 45%
 - 2.5%
 - $\frac{1}{4}\%$
 - $6\frac{1}{4}\%$
- Find :
 - 70% of ₹ 500
 - 0.25% of 96
 - 12% of 800
 - $6\frac{2}{3}\%$ of 87
 - 7.5% of 60 kg
 - 9% of 6 litres
- Find the value of x if :
 - $x\%$ of 125 is 8
 - $x\%$ of 1 kg is 50 g
 - $x\%$ of 15200 is 1824
 - $x\%$ of 110 is 11
 - $x\%$ of ₹ 320 is ₹ 272
- Convert $\frac{3}{4}$ into per cent.
- Convert each of the given decimals into a percentage :
 - 0.65
 - 0.07
 - 0.3
- What per cent of :
 - 5 kg is 50 g?
 - 8.5 m is 17 m?
- Express 8 hours as a percentage of 2 days.
- Find 15% less than ₹ 75.
- Find 20% more than ₹ 90.
- Find the value of x if :
 - $12\frac{1}{2}\%$ of $x = 600$
 - 3.7% of $x = 74$
- If 6% of x is 84, find the value of x .
- If 40% of a number is 8, what is the number?
- Find the distance whose $3\frac{1}{3}\%$ is 3 km.
- What is the sum of money of which 13% is ₹ 156?

Word Problems on Percentage

The following examples illustrate the use of the concept of percentage in solving some real life related problems.



EXERCISE 10.2

1. A shopkeeper has 124 cycle parts, out of which 8 are defective. What percentage is defective?
2. There are 150 voters. 9 of them did not cast their votes. What percentage did not cast their votes?
3. On a particular day, out of 40 students in a class 8 were absent. What percentage of the students were present?
4. The population of a town increases by 10.5% every year. If its present population is 795600, what was it a year ago?
5. 36% of the maximum marks are required to pass a test. A student gets 109 marks and is declared failed by 35 marks. Find the maximum marks.
6. The price of a book is increased by 12%. If its increased price is ₹ 145.60, find the original price.
7. The salary of an employee is increased by 20%. By what percentage should the new salary be reduced to restore the original salary?

8. Out of his total monthly income Mr Moti Lal spends 20% on house rent and 60% of the rest on household expenses. If he saves ₹ 2520 per month, what is his total monthly income?
9. Anil obtained 375 marks out of 500 in an examination while Sunil obtained 420 marks out of 600. Whose performance is better?
10. A school has 1800 students on its roll, 40% of whom are girls. How many boys are there in the school?
11. Mohnish secured 45 marks out of 75 in Mathematics. Find the percentage of marks obtained by Mohnish in Mathematics.
12. Out of an income of ₹ 25000, Rohan spends ₹ 16500. What per cent of his income does he save?
13. A number is increased by 10% and then decreased by 10%. Find the net increase or decrease per cent.
14. The price of a shirt is reduced by 15% in a discount sale. If its present price is ₹ 123.25, find its original price.
15. The price of sugar has risen by 20%. By how much per cent must a housewife reduce her consumption of sugar, so as not to increase her expenditure on it?
16. A's income is 20% more than that of B. How much per cent is the income of B less than that of A?
17. 6% commission on the sale of a land amounts to ₹ 5688. What is the total value of the land?
18. An ore contains 18% of copper. How many kg of the ore are required to get 63 kg of copper?
19. The value of a car decreases annually by 20%. If the present value of the car is ₹ 3,45,000, what will be its value after 2 years?



EXERCISE 10.3

1. A chair is purchased for ₹ 700 and sold for ₹ 570. Find gain or loss per cent.
2. A man purchased a sewing machine for ₹ 1250 and spent ₹ 250 on its transportation. He sold it for ₹ 1600. Find his profit per cent.
3. The cost price of 16 articles is equal to the selling price of 12 articles. Find the gain per cent.
4. The cost price of 12 pencils is equal to the selling price of 10 pencils. Find the profit per cent.
5. Parvinder sold a watch at a loss of 5%. If he had sold that watch for ₹ 27 more, he would have gained 7%. Find the cost price of the watch.
6. A shopkeeper sells an article at a profit of 10%. If the article costs him ₹ 1960, find its selling price.
7. Find the selling price of a table, if its cost price is ₹ 1250 and loss is 15%.
8. By selling a flower vase for ₹ 600, a shopkeeper gains 15%. Find its cost price.
9. By selling a wooden table at a loss of 20%, a shopkeeper makes a loss of ₹ 90. Find its (i) selling price (ii) cost price.
10. By selling an article for ₹ 1600, a shopkeeper loses 20%. For how much should he sell it to gain 20%?
11. By selling a watch for ₹ 1505, a man gains $\frac{1}{6}$ of its cost price. Find the cost price of the watch.
12. By selling 8 dozen pencils, a shopkeeper gains the selling price of one dozen pencils. Find his gain per cent.
13. Manoj purchased lemons with ₹ 600. He sold $\frac{3}{4}$ of these at a loss of 20% and the remaining at a gain of 20%. How much per cent does he gain or lose on the whole transaction?
14. A dealer gains 15% by selling his goods for ₹ 8050. He decides to make a profit of only 10%. What is the new selling price?
15. A machine was purchased for ₹ 3750 and ₹ 250 were paid for its transportation. If it is sold at a gain of ₹ 40, find the gain per cent.
16. By selling an article for ₹ 3600, a man makes a profit of 20%. What is the cost price of the article? What would his gain% be if he sold the article for ₹ 4000?



EXERCISE 10.4

1. A sum of ₹ 1800 is lent for 2 years at 12% per annum. Find the interest.
2. Calculate the simple interest on ₹ 5600 for 3 years at the rate of 12% per annum. Also, find the amount to be paid at the end of 3 years.
3. Sunil borrowed ₹ 3800 from the bank at the rate of $14\frac{1}{2}\%$ per annum for $2\frac{1}{2}$ years. Find the interest and amount paid by him at the end of $2\frac{1}{2}$ years.
4. Find the principal when the amount is ₹ 3600 and interest is ₹ 200.
5. Harish borrowed ₹ 15000 from Subhash at 16% per annum for $3\frac{1}{2}$ years. Find the interest and the amount paid by Harish to Subhash.
6. Surabhi deposited ₹ 7500 in a finance company which pays 15% per annum. Find the amount Surabhi is expected to get after $5\frac{3}{4}$ years.
7. Priyanka deposited ₹ 6500 in a bank which pays 9% per annum interest. She withdrew ₹ 1250 after the end of the first year. What amount will she get after three years?
8. Mrs. Sood deposited ₹ 17000 in a bank at the rate of 12% per annum. If 30% is deducted as income tax on the interest, find the net annual income.
9. A man borrowed some money from the bank at 10% per annum simple interest for 5 years. He paid back ₹ 3600 to the bank and settled the account. What sum did he borrow from the bank?
10. ₹ 1200 is invested at 8% simple Interest per annum. In how much time will it double itself?
11. Mohsin lent a sum of money at 10% per annum simple interest and received an interest of ₹ 2160 in 6 years. Find the sum.
12. The simple interest on a certain sum of money for 5 years at 10% per annum is ₹ 196 less than the simple interest on the same sum for 4 years at 16% per annum. Find the sum.
13. At what rate per cent will a sum of ₹ 1200 amount to ₹ 1600 in 6 years?
14. Anil borrowed a sum of ₹ 12300 for a certain period at the rate of 10% per annum and returned ₹ 18450 on expiry of the time. Find the time for which money was borrowed by him.
15. Naveen borrowed ₹ 5000 from the bank at 16% per annum. He returned the amount after 2 years. How much did he pay?