

## CHAPTER 8

# COMPARING QUANTITIES

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### Points to Remember :

1. A ratio is a fraction.
2. A ratio is always in the simplest form.
3. Four numbers  $a, b, c, d$  are in proportion if  $a : b :: c : d$  or  $a \times d = b \times c$ .
4. Fraction can be converted into percentage and vice-versa.
5. The price at which we buy the goods is called its Cost Price (CP).
6. The price at which goods are sold is called its Selling Price (SP).
7. If  $SP > CP$  then there is a profit and  $SP - CP = \text{Profit}$ .
8. IF  $SP < CP$  then there is a loss and  $CP - SP = \text{Loss}$ .
9.  $\text{Gain \%} = \frac{\text{Gain}}{\text{CP}} \times 100$ ,  $\text{Loss \%} = \frac{\text{Loss}}{\text{CP}} \times 100$
10. Amount = Principal + Interest
11. Simple Interest =  $\frac{P \times R \times T}{100}$ .

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### QUESTIONS

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1. Find the ratio in the simplest form :
  - (i) 3 kg to 12 kg
  - (ii) 80 paise to Rs. 2
  - (iii) 12.8 m to 3.2 m.
2. Ram bought 5 kg potatoes and Vineet bought 3 kg 500 g potatoes. Find the ratio of Ram's and Vineet's potatoes.
3. A school has 800 students. There are 500 girls and remaining are boys. Find the ratio of boys and girls.

4. Amit's salary is Rs. 42000 p.m. and he pays Rs. 6000 as income tax every month. Find the ratio of his income to the income tax.
5. The length of a ribbon is 10 m and its width is 25 cm. Find the ratio of width to the length.
6. Express the following ratios into the simplest form :
  - (a) 15 : 18
  - (b) 32 : 40
  - (c) 108 : 12
7. Find equivalent ratio for each of the following :
  - (a) 2 : 5
  - (b) 4 : 9
8. The first three terms of a proportion are 2, 3, and 6. Find the fourth term.
9. If  $3 : x :: 9 : 15$ , find  $x$ .
10. Out of 400 oranges, 80 oranges are found rotten. Find the ratio of rotten oranges to good oranges.
11. Which ratio is greater :
  - (i) 15 : 18 or 24 : 27?
  - (ii) 15 : 27 or 32 : 40?
12. Find the cost of 10 pencils, if cost of 6 pencils is Rs. 72.
13. 6 kg. of rice is enough for 20 people. How much rice is required for 100 people?
14. Bananas are available in the market at the rate of Rs. 24 per dozen. Find the cost of 10 bananas.
15. Convert the following fractions into percent :
  - (a)  $\frac{12}{16}$
  - (b)  $\frac{49}{60}$
  - (c)  $\frac{4}{4}$
16. Convert the following percentage into decimals :
  - (a) 10.2%
  - (b) 40%
  - (c) 0.07%
17. Express the following percentage as fraction in its lowest form :
  - (a) 75%
  - (b) 20%
  - (c) 6%
18. If 75 percent of students in a class like to play hockey, what percentage of students do not like to play hockey?
19. In a fruit basket, 50% are apples, 25% are oranges and remaining are bananas. Find the % of bananas.
20. A shop has 500 bulbs out of which 10 are defective. What percent of bulbs are defective?
21. Find :
  - (a) 50% of 175
  - (b) 75% of Rs. 120
  - (c) 25% of 64 kg.



47. Ram purchased a radio set for Rs. 400 and sold it to Shyam at a profit of 25%. Shyam sold it to Mohan at a loss of 10%. For how much money did Mohan buy it?
48. There are 13 boys and 12 girls in the class. What is the percentage of girls in the class?
49. Kapil bought a sofa set for Rs. 4500 and sold it for Rs. 4,200. Find his loss percent.
50. A farmer bought a cow for Rs. 12,000 and sold it at a gain of 10%. Find the S.P. of the cow.

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## ANSWERS

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| 1. (i) 1 : 4 (ii) 2 : 5 (iii) 4 : 1                              | 2. 10 : 7                              |
| 3. 3 : 5   | 4. 7 : 1                               |
| 5. 1 : 40  | 6. (a) 5 : 6 (b) 4 : 5 (c) 9 : 1       |
| 7. (a) 4 : 10 (b) 8 : 18   | 8. 9                                   |
| 9. 5   | 10. 1 : 4                              |
| 11. (i) 24 : 27 (ii) 32 : 40                                     | 12. Rs. 120                            |
| 13. 30 kg  | 14. Rs. 20                             |
| 15. (a) = 75% (b) = 98% (c) = 100%                               | 16. (a) = 0.102% (b) = 0.40 (c) 0.0007 |
| 17. (a) = $\frac{3}{4}$ (b) = $\frac{1}{5}$ (c) = $\frac{3}{50}$ | 18. 25%                                |
| 19. 25%  | 20. 2%                                 |
| 21. (a) 87.5 (b) Rs. 90 (c) 16 kg.                               | 22. $x = 20$                           |
| 23. Rs. 2000   | 24. 20%                                |
| 25. 4%   | 26. (a) = 20% (b) = 80% (c) = 37½%     |
| 27. 30°, 60°, 90°  | 28. 40%                                |
| 29. Gain 25%   | 30. 25%                                |
| 31. 20%  | 32. Rs. 1500                           |
| 33. Rs. 4000   | 34. 20%                                |
| 35. $33\frac{1}{3}\%$  | 36. Rs. 40                             |
| 37. I = Rs. 150, A = Rs. 1150.                                   | 38. I = Rs. 12; A = Rs. 212            |
| 39. Rs. 90   | 40. 5%                                 |
| 41. 5 years  | 42. 7% p.a.                            |
| 43. 20 years   | 44. 25%                                |

45. 25 years

46. 12%

47. Rs. 450

48. 48%

49.  $6\frac{2}{3}\%$

50. Rs. 13,200

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## RAPID FIRE

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1. The ratio of 2 minute to 1 hour is \_\_\_\_\_.
2. The present population of a town is 50,000. If the population increases 5% then what is the population after 1 year?
3. If 25% of  $x$  is 500, find  $x$ .
4.  $x\%$  of  $y$  is .....
5. 0.75 is equal to what percent?
6.  $\frac{1}{3}$  as percent is equal to .....
7. Rita scored 90% marks in Maths out of 500. What marks did Rita scored?
8. What is SI for Rs. 1000, if rate % = 5% p.a. and time 2 years?
9. Ram purchases an article for Rs. 1000 and sold it at Rs. 800. Find his loss %.
10. Find the Principal if SI = Rs. 100, Time = 2 years, Rate = 5% p.a.

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## ANSWERS

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1. 1 : 30

2. 52500

3. 2000

4.  $xy/100$

5. 75%

6.  $33\frac{1}{3}\%$

7. 450 marks

8. Rs. 100

9. 20% loss

10. Rs. 1000