Solutions: Assignment 1

---

1. What is 25% of 200?

- Solution: (25/100) * 200 = 50

2. If 40% of a number is 80, what is the number?

- Solution: Number = 80 / (40/100) = 200

3. 75% of a number is 150. What is the number?

- Solution: Number = 150 / (75/100) = 200

4. What is 15% of 120?

- Solution: (15/100) * 120 = 18

5. If 30% of a number is 90, then the number is:

- Solution: Number = 90 / (30/100) = 300

6. The price of a product increases from ₹200 to ₹250. What is the percentage increase?

- Solution: [(250 - 200) / 200] * 100 = 25%

7. A salary increases from ₹40,000 to ₹50,000. What is the percentage increase?

- Solution: [(50000 - 40000) / 40000] * 100 = 25%

8. The population of a town decreased from 10,000 to 8,000. What is the percentage decrease?

- Solution: [(10000 - 8000) / 10000] * 100 = 20%

9. A book's price drops from ₹500 to ₹400. What is the percentage decrease?

- Solution: [(500 - 400) / 500] * 100 = 20%

10. If the cost price of an item is ₹600 and the selling price is ₹450, what is the percentage loss?

- Solution: [(600 - 450) / 600] * 100 = 25%

11. Which is greater: 30% of 400 or 40% of 300?

- Solution: 30% of 400 = 120; 40% of 300 = 120. Both are equal.

12. A person spends 60% of his income and saves ₹8,000. What is his total income?

- Solution: Income = 8000 / (40/100) = ₹20,000

13. If A is 20% more than B, then B is how much less than A?

- Solution: B is less than A by [20/(100+20)]*100 = 16.67%

14. If the price of sugar is increased by 25%, by how much should the consumption be reduced to maintain the same expense?

- Solution: Reduction = [25 / (100 + 25)] * 100 = 20%

15. If A’s income is 40% more than B’s income, then B’s income is what percentage less than A’s?

- Solution: Reduction = [40 / (100 + 40)] * 100 = 28.57%

16. The price of an item is increased by 20% and then decreased by 10%. What is the net percentage change?

- Solution: Net change = 20 - 10 - (20*10)/100 = 8% increase

17. A number increased by 30% and then decreased by 20%. What is the final percentage change?

- Solution: Net change = 30 - 20 - (30*20)/100 = 4% increase

18. If the population of a city increases by 25% and then decreases by 20%, what is the net percentage change?

- Solution: Net change = 25 - 20 - (25*20)/100 = 0%

19. If a price increases by 40% and then decreases by 30%, the final change is:

- Solution: Net change = 40 - 30 - (40*30)/100 = 2% increase

20. The salary of a person is first increased by 20% and then decreased by 10%. What is the overall percentage change?

- Solution: Net change = 20 - 10 - (20*10)/100 = 8% increase

21. If an article is sold at a profit of 25%, then the selling price is what percentage of the cost price?

- Solution: 100% + 25% = 125%

22. A shopkeeper allows a discount of 10% on the marked price and still makes a profit of 8%. If the marked price is ₹500, what is the cost price?

- Solution: Selling Price = 500 * (90/100) = ₹450
- Cost Price = 450 * (100/108) = ₹416.67

23. If the profit is 20% of the cost price, then what is the profit percentage on the selling price?

- Solution: Profit % on SP = (20/120) * 100 = 16.67%

24. A product is marked at ₹1,200 and sold for ₹960. What is the percentage discount given?

- Solution: [(1200 - 960) / 1200] * 100 = 20%

25. If an article is bought for ₹500 and sold for ₹650, what is the percentage profit?

- Solution: [(650 - 500) / 500] * 100 = 30%

26. If A’s income is 20% more than B’s, then B’s income is what percentage less than A’s?

- Solution: [20 / (100 + 20)] * 100 = 16.67%

27. If the ratio of boys to girls in a school is 3:2, what percentage of the total students are boys?

- Solution: (3 / (3+2)) * 100 = 60%

28. A city’s population increased from 2,00,000 to 2,50,000 in 2 years. What is the percentage increase?

- Solution: [(250000 - 200000) / 200000] * 100 = 25%

29. In an election, a candidate gets 65% of the total votes and wins by 3000 votes. How many total votes were cast?

- Solution:
- Winner got 65%, loser got 35%.
- Difference (30%) = 3000 votes
- Total votes = (3000 / 30) * 100 = 10,000

30. The price of an article is reduced by 30%. By what percentage must the new price be increased to restore the original price?

- Solution: [30 / (100 - 30)] * 100 = 42.85%

31. If a number is increased by 50% and then decreased by 50%, what is the net percentage change?

- Solution: 50 - 50 - (50*50)/100 = -25% (25% decrease)

32. If A is 20% taller than B, then B is shorter than A by:

- Solution: [20 / (100 + 20)] * 100 = 16.67%

33. If 30% of a number is 90, what is 60% of the same number?

- Solution: If 30% is 90, then 60% is 180.

34. A person spends 75% of his income and saves ₹5000. What is his total income?

- Solution: Income = 5000 / (25/100) = ₹20,000

35. The price of petrol increases by 20%. By what percentage should consumption be reduced to maintain the same expense?

- Solution: [20 / (100 + 20)] * 100 = 16.67%

36. The price of a TV was first increased by 20% and then decreased by 10%. What is the overall percentage change?

- Solution: 20 - 10 - (20*10)/100 = 8% increase

37. A shopkeeper marks an item 25% above the cost price and gives a 20% discount. What is his profit/loss percentage?

- Solution:
- Let CP = 100, MP = 125, SP = 125 * (80/100) = 100
- 0%

38. If the cost price of an article is ₹500 and it is sold at a loss of 20%, what is the selling price?

- Solution: 500 * (80/100) = ₹400

39. If a salary is increased by 10% and then decreased by 10%, what is the final percentage change?

- Solution: 10 - 10 - (10*10)/100 = -1% (1% decrease)

40. A student needs 40% marks to pass. He gets 200 marks and fails by 20 marks. What are the total marks?

- Solution:
- Passing marks = 200 + 20 = 220
- Total marks = (220 / 40) * 100 = 550

41. A man spends 20% of his salary on rent, 30% on food, and 10% on transport. If he saves ₹18,000, what is his salary?

- Solution:
- Spending = 20% + 30% + 10% = 60%
- Saving = 40%
- Salary = 18000 / (40/100) = ₹45,000

42. The cost of an item is first increased by 30% and then decreased by 30%. What is the overall percentage change?

- Solution: 30 - 30 - (30*30)/100 = -9% (9% decrease)

43. The population of a town increases by 10% every year. If the current population is 10,000, what will it be after 3 years?

- Solution: 10000 * (1.1)^3 = 13,310

44. If 15% of A is equal to 20% of B, then A:B is:

- Solution: 0.15A = 0.20B => A/B = 0.20/0.15 = 4/3

45. If the cost price of an item is ₹800 and the profit made is 25%, what is the selling price?

- Solution: 800 * 1.25 = ₹1000

46. If the cost price (CP) of an item is ₹200 and the selling price (SP) is ₹250, what is the profit percentage?

- Solution: [(250 - 200) / 200] * 100 = 25%

47. A man sells an article for ₹720 at a profit of 20%. Find the cost price.

- Solution: 720 / 1.20 = ₹600

48. A shopkeeper sells an item at a loss of 15%. If the cost price is ₹500, find the selling price.

- Solution: 500 * (85/100) = ₹425

49. A man purchased a cycle for ₹1500 and sold it at a loss of 10%. What was the selling price?

- Solution: 1500 * (90/100) = ₹1350

50. A trader marks his goods at 30% above the cost price and allows a discount of 10%. What is his gain percent?

- Solution:
- Let CP = 100, MP = 130, SP = 130 * (90/100) = 117
- Gain % = 17%