

Assignment 1

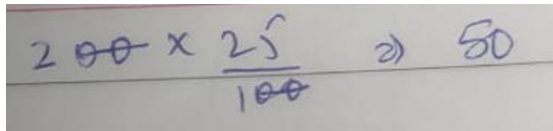
Topic : Percentage & Profit & Loss question Bank

Deadline: Monday 10th March

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1. What is 25% of 200?

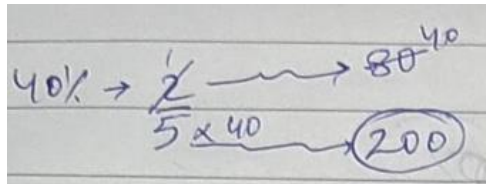
- a) 25
- b) 50
- c) 75
- d) 100



Handwritten calculation: $200 \times \frac{25}{100} = 50$

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

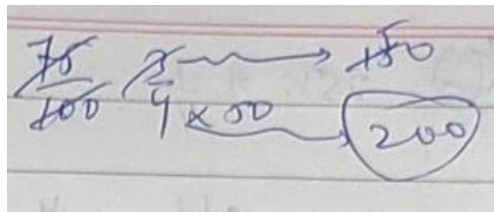
- a) 100
- b) 150
- c) 200
- d) 250



Handwritten calculation: $40\% \rightarrow \frac{2}{5}$, $\frac{2}{5} \times 40 = 80$, $5 \times 80 = 400$

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

- a) 175
- b) 200
- c) 225
- d) 250



Handwritten calculation: $\frac{75}{100} \rightarrow \frac{3}{4}$, $\frac{3}{4} \times 150 = 112.5$, $4 \times 112.5 = 450$

4. What is 15% of 120?

- a) 12
- b) 15
- c) 18
- d) 20

Handwritten calculation: $15\% \times 120$. The student has written 15% above a horizontal line, and 120 below it. A vertical line is drawn to the left of the numbers. The result 18 is circled.

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

- a) 200
- b) 250
- c) 300
- d) 350

Handwritten calculation: $\frac{30}{100} \times \text{?} = 90$. The student has written 30 above a horizontal line, and 100 below it. A vertical line is drawn to the left of the numbers. The result 300 is circled.

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

- a) 20%
- b) 25%
- c) 30%
- d) 35%

Handwritten calculation: $\frac{250 - 200}{200} \times 100$. The student has written 250 above a horizontal line, and 200 below it. A vertical line is drawn to the left of the numbers. The result 25% is circled.

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

- a) 20%
- b) 25%
- c) 30%
- d) 35%

Handwritten calculation for question 7:

40000 $\xrightarrow{10000}$ 50000

$$\frac{10000}{40000} \times 100 = 25\%$$

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

- a) 10%
- b) 15%
- c) 20%
- d) 25%

Handwritten calculation for question 8:

10000 $\xrightarrow{2000}$ 8000

$$\frac{2000}{10000} \times 100 = 20\% \downarrow$$

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

- a) 10%
- b) 15%
- c) 20%
- d) 25%

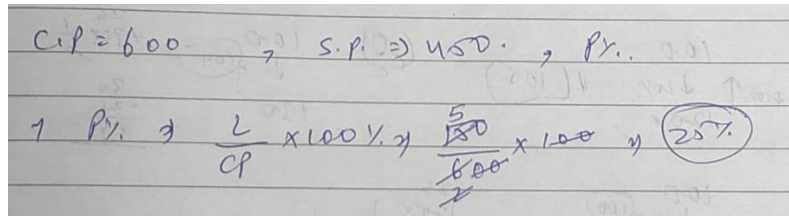
Handwritten calculation for question 9:

500 $\xrightarrow{100}$ 400

$$\frac{100}{500} \times 100 = 20\%$$

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

- a) 20%
- b) 22.5%
- c) 25%
- d) 30%



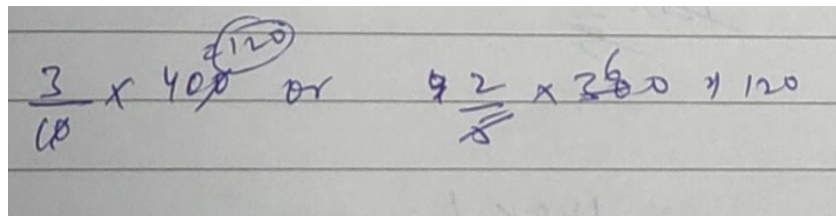
Handwritten calculation for percentage loss:

$$\text{C.P.} = 600, \text{ S.P.} = 450, \text{ P.L.} = ?$$
$$\% \text{ P.L.} = \frac{\text{Loss}}{\text{C.P.}} \times 100\% = \frac{600 - 450}{600} \times 100 = \frac{150}{600} \times 100 = 25\%$$

1. ### **Section 3: Percentage Comparison**

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

- a) 30% of 400
- b) 40% of 300
- c) Both are equal
- d) Cannot be determined

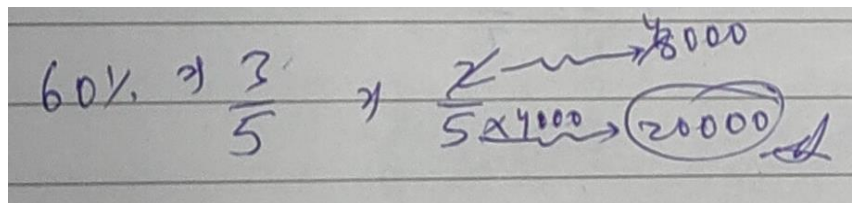


Handwritten calculation for percentage comparison:

$$\frac{30}{100} \times 400 = 120 \text{ or } \frac{40}{100} \times 300 = 120$$

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

- a) ₹15,000
- b) ₹18,000
- c) ₹20,000
- d) ₹25,000

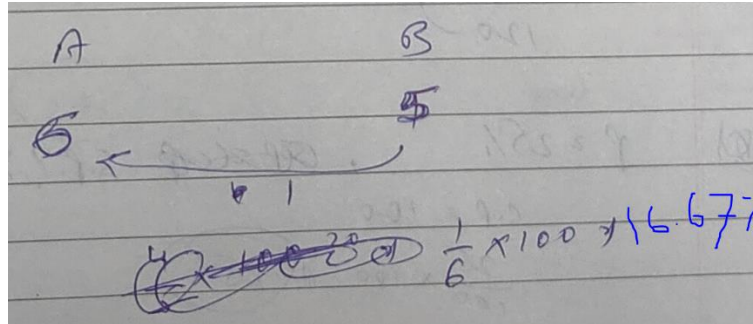


Handwritten calculation for total income:

$$60\% = \frac{3}{5} \Rightarrow \frac{2}{5} \times \text{Income} = 8000$$
$$\text{Income} = \frac{8000 \times 5}{2} = 20000$$

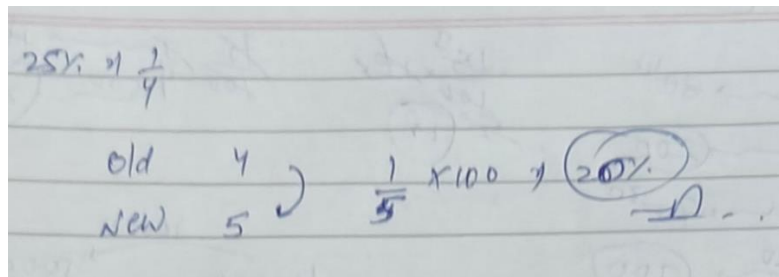
13. If A is 20% more than B, then B is how much less than A?

- a) 20%
- b) 16.67%
- c) 25%
- d) 10%



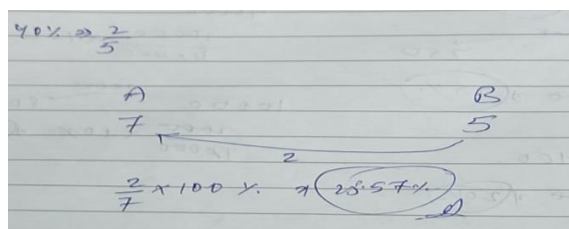
14. If the price of sugar is increased by 25%, by how much should the consumption be reduced to maintain the same expense?

- a) 20%
- b) 25%
- c) 30%
- d) 15%



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

- a) 28.57%
- b) 30%
- c) 33.33%
- d) 40%



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

- a) 8% increase
- b) 8% decrease
- c) 10% increase
- d) 10% decrease

Handwritten calculation for problem 16: Starting with 100, a 20% increase leads to 120. A 10% decrease from 120 results in 108. The net change is an 8% increase from the original 100.

$$100 \xrightarrow{+20\%} 120 \xrightarrow{-10\%} 108$$

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

- a) 4% increase
- b) 8% increase
- c) 10% increase
- d) 12% increase

Handwritten calculation for problem 17: Starting with 100, a 30% increase leads to 130. A 20% decrease from 130 results in 104. The net change is a 4% increase from the original 100.

$$100 \xrightarrow{+30\%} 130 \xrightarrow{-20\%} 104$$

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

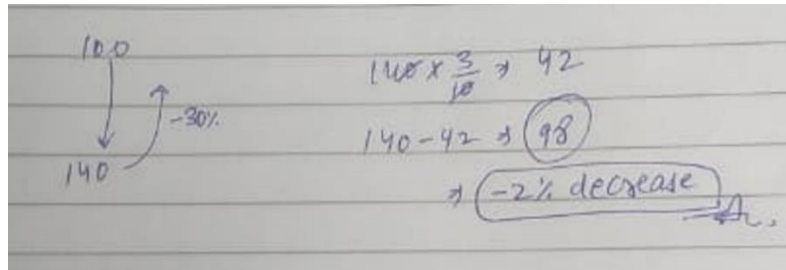
- a) 0%
- b) 5% increase
- c) 10% decrease
- d) 5% decrease

Handwritten calculation for problem 18: Starting with 100, a 25% increase leads to 125. A 20% decrease from 125 results in 100. The net change is 0%.

$$100 \xrightarrow{+25\%} 125 \xrightarrow{-20\%} 100$$

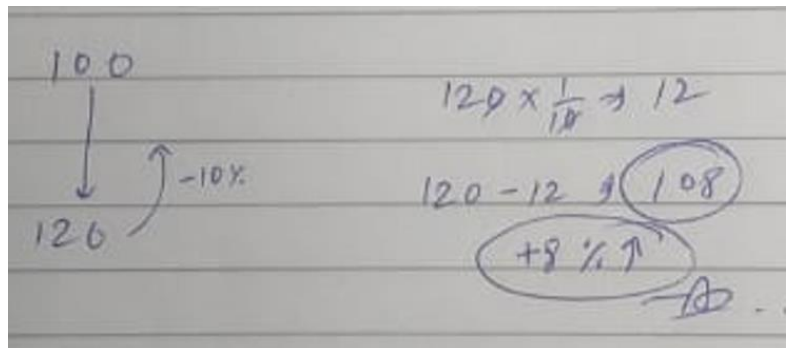
19. If a price increases by 40% and then decreases by 30%, the final change is:

- a) 2% increase
- b) 10% increase
- c) 10% decrease
- d) 2% decrease



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

- a) 8% increase
- b) 10% increase
- c) 10% decrease
- d) No change



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

- a) 100%
- b) 125%
- c) 150%
- d) 175%

Handwritten solution for Question 21:

$P = 25\%$
 $C.P. = 100$
 $\frac{25}{100} \times 100 = 25\%$

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?

- a) ₹400
- b) ₹420
- c) ₹450
- d) ₹460

Handwritten solution for Question 22:

10% on M.P. ; $P = 8\%$; M.P. = ₹500 ; C.P. = ?
 $\rightarrow 500 \times \frac{9}{10} = 450$; $S.P. = 450$
 $P = 8\% \text{ of C.P.}$
 $S.P. = C.P. + 8\% P$
 $S.P. = C.P. + 8\% \text{ of C.P.}$
 $450 = C.P. \left(1 + \frac{8}{100} \right)$
 $450 = C.P. \left(\frac{27}{25} \right)$
 $\rightarrow \frac{450 \times 25}{27} = C.P.$
 $\rightarrow C.P. = 416.66 \text{ ₹}$

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

- a) 16.67%
- b) 18%
- c) 20%
- d) 22%

(Q23) $P = 20\%$ of C.P. ; $\{P\% \text{ on S.P.} = ?\}$ $P = \frac{1}{5}$

P	C.P.	S.P.
1	5	6

$\frac{1}{6} \times 100 = 16.67\%$

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

- a) 15%
- b) 20%
- c) 25%
- d) 30%

(Q24) M.P. ₹1200 & S.P. = 960 % of discount

$\frac{240}{1200} \times 100 = 20\%$ $\frac{1200 - 960}{1200} \times 100 = 20\%$

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

- a) 20%
- b) 25%
- c) 30%
- d) 35%

(Q25) C.P. = 500 ; S.P. = 650 ; $\{P\% = ?\}$

$\frac{150}{500} \times 100 = 30\%$

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

- a) 16.67%
- b) 18%
- c) 20%
- d) 25%

$(Q26) \quad 20\% = \frac{1}{5}$
 $A \quad (20\% + 1) \quad 1.2 \quad B$
 $6 \quad \quad \quad 5$
 $\frac{1}{6} \times 100 = 16.67\%$

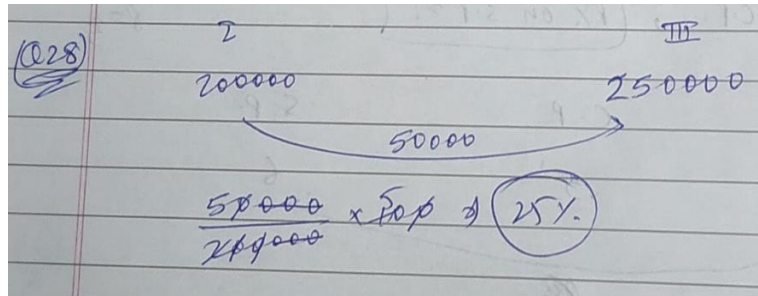
27. If the ratio of boys to girls in a school is 3:2, what percentage of the total students are boys?

- a) 30%
- b) 40%
- c) 50%
- d) 60%

$(Q27) \quad \frac{3}{5} \times 100 = 60\%$

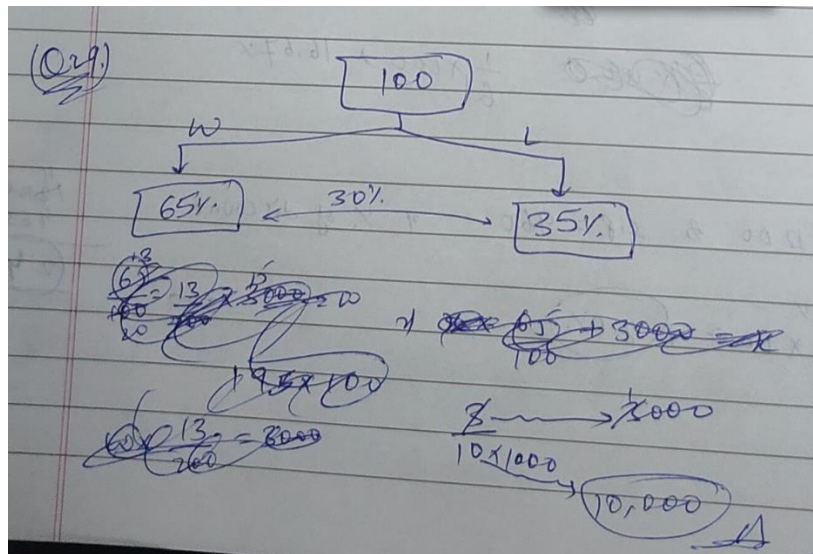
28. A city's population increased from 2,00,000 to 2,50,000 in 2 years. What is the percentage increase?

- a) 20%
- b) 25%
- c) 30%
- d) 35%



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

- a) 5000
- b) 6000
- c) 8000
- d) 9000
- e) 10000



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

- a) 30%
- b) 42.85%
- c) 50%
- d) 60%

(Q.30)

$$100 \xrightarrow{+50\%} 150 \xrightarrow{-50\%} 75$$

$$\frac{75}{100} \times 100 = 75\%$$

42.5%

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

- a) 0%
- b) 25% decrease
- c) 50% decrease
- d) 75% decrease

(Q.31)

$$100 \xrightarrow{+50\%} 150 \xrightarrow{-50\%} 75$$

$$100 - 75 = 25$$

25% ↓

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

- a) 16.67%
- b) 18%
- c) 20%
- d) 25%

(Q.32)

20% $\frac{2}{10} = \frac{1}{5}$

A = 6, B = 5

$$\frac{1}{6} \times 100\% = 16.67\%$$

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

- a) 120
- b) 150
- c) 180
- d) 200

(Q33)

$$\frac{30}{100} \times 2 \rightarrow 30$$

$$\frac{3}{5} \times 300 = 180$$

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

- a) ₹15,000
- b) ₹18,000
- c) ₹20,000
- d) ₹25,000

(Q34)

$$\frac{3}{4} \rightarrow \text{spend, } \frac{1}{4} = 5000$$

$$\frac{1}{4} \times 20000 = 5000$$

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

- a) 16.67%
- b) 18%
- c) 20%
- d) 25%

(Q35)

$$\frac{20}{120} \times 100 = 16.67\%$$

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

- a) 8% increase
- b) 10% increase
- c) 10% decrease
- d) No change

(Q36) 5% ↑

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

- a) 0%
- b) 2% profit
- c) 5% profit
- d) 10% loss

(Q37) M.P. is 25% above C.P. & D = 20%
 Let C.P. = 100
 M.P. = 125
 $125 \times \frac{1}{5} = 25$
 $125 - 25 = 100$
 100 → 0%
 A

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

- a) ₹350
- b) ₹375
- c) ₹400
- d) ₹450

(Q38) C.P. = 500 S.P. is ↓ 20% ; S.P. = ?
 $20\% \text{ of } 500 = 100$
 $S.P. = 500 - 100$
 $S.P. = ₹400$
 A

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

- a) 0%
- b) 1% decrease

- c) 1% increase
- d) 2% decrease

(Q39) 1% ↓

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

- a) 500
- b) 550
- c) 600
- d) 650

(Q40) P.M. = 40% ; T.M. = ?
 200 - 20
 Pass chahiye the 220
 T.M. = 550

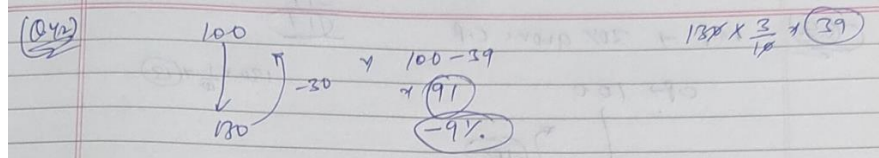
41 A man spends 20% of his salary on rent, 30% on food, and 10% on transport. If he saves ₹18,000, what is his salary?

- a) ₹40,000
- b) ₹45,000
- c) ₹50,000
- d) ₹55,000

(Q41)
 Rent 20%
 Food 30%
 Trans 10%
 60%
 Save 40%
 ₹18,000
 ₹45,000

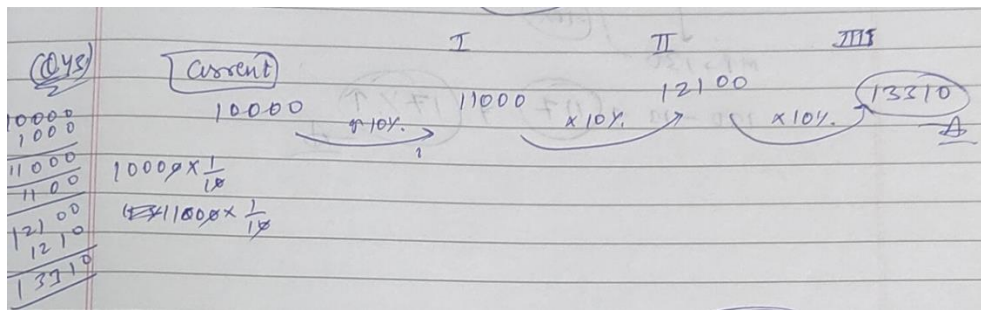
42 The cost of an item is first increased by 30% and then decreased by 30%. What is the overall percentage change?

- a) 0%
- b) 9% decrease
- c) 9% increase
- d) 15% decrease



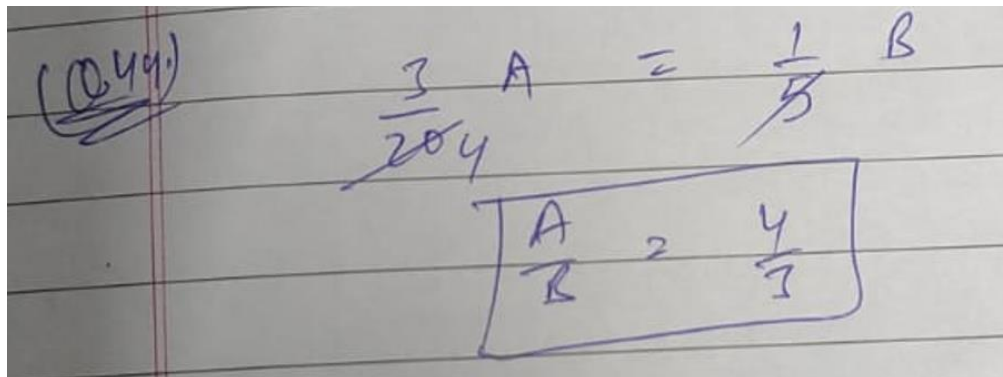
43) The population of a town increases by 10% every year. If the current population is 10,000, what will it be after 3 years?

- a) 13,310
- b) 13,500
- c) 14,000
- d) 14,200



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

- a) 3:4
- b) 4:3
- c) 3:5
- d) 5:3



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

- a) ₹900
- b) ₹1000
- c) ₹1050
- d) ₹1100

(Q45) C.P. = 800, P = 25%
 $800 + 200 = ₹1000$ A

$800 \times \frac{1}{4}$

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

- a) 20%
- b) 25%
- c) 30%
- d) 40%

(Q46) 25%

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

- a) ₹600
- b) ₹620
- c) ₹650
- d) ₹700

(Q47) S.P. = ₹720 ; P = 20%
 $\frac{20}{100} \times 720 = 144$
 $720 - 144 = ₹576$ A

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

- a) ₹400
- b) ₹425
- c) ₹450
- d) ₹475

(Q48) L = 15% ; C.P. = ₹500 ; S.P. = ?
 $500 - 75 = ₹425$ A

$500 \times \frac{15}{100} = 75$

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

- a) ₹1200
- b) ₹1300
- c) ₹1350

d) ₹1400

(Q.49) C.P = ₹1500 L = 10% S.P. = ?

$$+ 1500 \times \frac{1}{10} = ₹150 = L$$
$$+ S.P. = C.P. - L$$
$$+ S.P. = 1500 - 150$$
$$+ \text{S.P.} = ₹1350 \quad \underline{A}$$

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

- a) 17%
- b) 18%
- c) 19%
- d) 20%

(Q.50) M.P. \rightarrow 30% above C.P.

$$\begin{array}{r} 130 \\ - 13 \\ \hline 117 \end{array}$$

C.P. \rightarrow 100

M.P. \rightarrow 130

\downarrow -10%

$$130 - 13 = 117$$
$$117 - 100 = 17 \quad \uparrow \quad 17\% \quad \underline{A}$$