

Topic : Percentage & Profit & Loss question Bank
Deadline: Monday 10th March

1. What is 25% of 200?

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

$$\begin{array}{r} 100 + 25\% \\ \parallel \\ 25 + 2 \end{array}$$

50%

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

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

$$\begin{array}{r} x \times 40\% = 80 \\ \hline 100 \end{array}$$

200

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

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

$$\cancel{2} \cancel{\times} \cancel{\frac{75}{100}} \cancel{\times} = 150$$
$$N = \cancel{\frac{60}{\phi}}$$

200

4. What is 15% of 120?

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

$$\cancel{6} \cancel{\times} \cancel{\frac{3}{100}} = N$$

18

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

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

$$\cancel{x + \frac{30}{100}x = 90}$$

~~$x + \frac{30}{100}x = 90$~~

~~$\cancel{x} + \cancel{\frac{30}{100}x} = \cancel{90}$~~

~~$1x + 0.3x = 90$~~

~~$1.3x = 90$~~

~~$x = 90 / 1.3$~~

~~$x = 69.23$~~

~~$x = 70$~~

~~$\cancel{300\%}$~~

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

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

~~$\text{whence for finding \% increase}$~~

~~$+ it by } 100$~~

~~$\text{New - old} \times 100$~~

~~$\frac{50}{200} \times 100\%$~~

~~25%~~

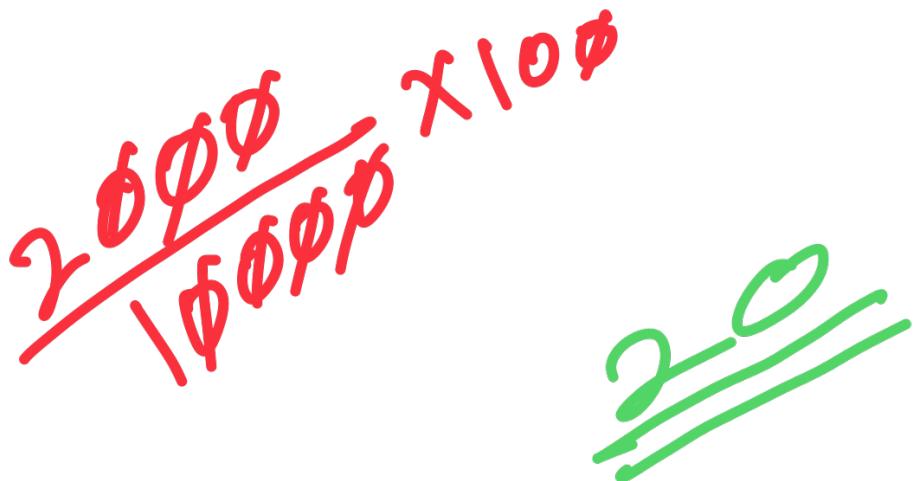
7. A salary increases from ₹40,000 to ₹50,000. What is the percentage increase?

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



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%



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

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

$$\begin{array}{r} \cancel{500} \\ - \cancel{400} \\ \hline 100 \end{array} \times \frac{20}{100}$$

$$\cancel{20}$$

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%

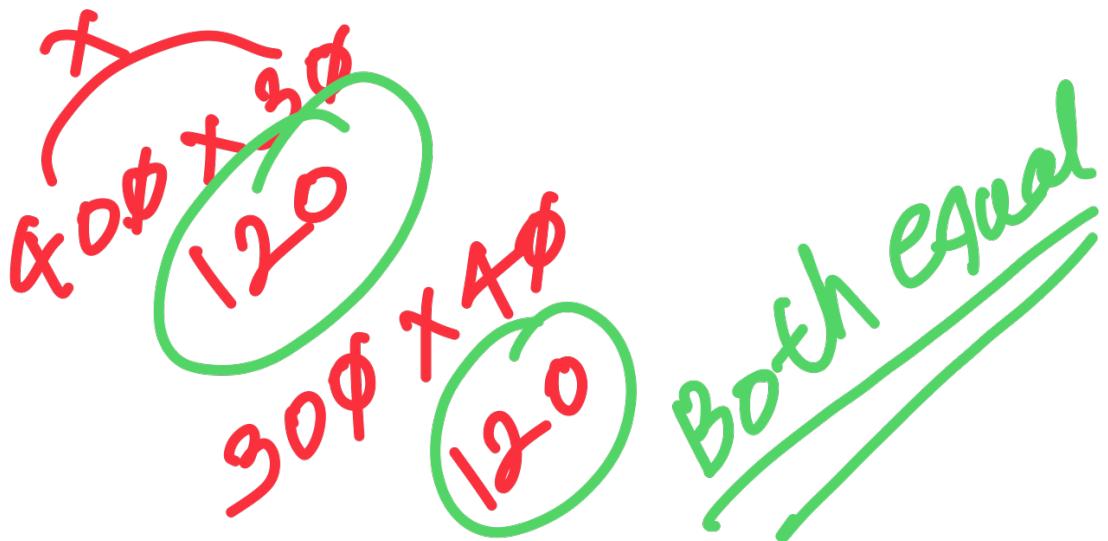
$$\begin{array}{r} CP = 600 \\ SP = \cancel{450} \\ \hline \cancel{150} \end{array}$$

$$\cancel{25\%}$$

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



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

$$\begin{aligned}
 x &= 100 \\
 \text{spendi} &= 60 \\
 \text{Save} &= 40 \\
 \frac{x}{100} &= \frac{\text{spendi}}{60} = \frac{\text{Save}}{40} \\
 \frac{100}{100} &= \frac{60}{40} \\
 1 &= 1.5 \\
 x &= 1.5 \times 100 \\
 x &= 150
 \end{aligned}$$

Note: The handwritten text shows "x = ?" above the first fraction, which is unusual. The solution path starts from the second fraction and uses the cross-cancellation method to find x = 150.

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%

$$\begin{aligned}B &= 100 \\A &= 120 \\&\cancel{\frac{20}{100}} \\&\times 6\end{aligned}$$

$$16.67$$

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

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

$$\begin{aligned}100 \\125 \\&\cancel{\frac{25}{100}} \\&\times 5\end{aligned}$$

$$25\%$$

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%

$$\begin{aligned}B &= 100 \\A &= 140\end{aligned}$$

~~20% increase~~

~~140~~

28.57%

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

$$\begin{aligned}100 + 20\% &= 120 \\120 - 10\% &= 108\end{aligned}$$

$\times 8\%$

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 diagram illustrating the calculation:

$$100 + 30\% = 130$$
$$130 - 20\% = 104$$
$$104 - 100 = 4\%$$

The diagram shows a red curved arrow pointing from 100 to 130, and another red curved arrow pointing from 130 to 104. To the right, there is a green double-headed arrow labeled "+4%".

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 diagram illustrating the calculation:

$$100 + 25\% = 125$$
$$125 - 20\% = 100$$
$$100 - 100 = 0\%$$

The diagram shows a red curved arrow pointing from 100 to 125, and another red curved arrow pointing from 125 back to 100. To the right, there is a green double-headed arrow labeled "0%".

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

A handwritten diagram showing the calculation of a 2% decrease after a 40% increase and a 30% decrease. It consists of two parts: a red circle and a green line. The red circle contains the following text:
100 + 40% = 140
140 - 30% = 98
98 - 2% = 97.96 (approx.)
The green line shows a downward trend with the label "- 2%" above it.

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

A handwritten diagram showing the calculation of an 8% increase after a 20% increase and a 10% decrease. It consists of two parts: a red circle and a green line. The red circle contains the following text:
100 + 20% = 120
120 - 10% = 108
108 + 8% = 117.76 (approx.)
The green line shows an upward trend with the label "+ 8%" above it.

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%

$$\begin{aligned} & \text{100 + 25\%} \\ & \text{125} \end{aligned}$$
$$\frac{125}{100} \times 100$$
$$125$$

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?

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

$$\begin{aligned} MP &= 500 \\ SP &= 450 - \frac{15000}{108} \end{aligned}$$
$$420$$

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%

$$\begin{array}{l} 100 \xrightarrow{20\%} \\ \downarrow \\ 120 \end{array}$$
$$\begin{array}{l} 1\phi \\ 1\phi \\ \hline 2\phi \\ \downarrow \\ 6\% \\ \hline 16.67\% \end{array}$$

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%

$$\begin{array}{l} MP = 1200 \\ SP = 960 \end{array}$$
$$\begin{array}{l} 240\% \\ \hline 1200\% \\ \hline 1/5 \\ \hline 20\% \end{array}$$

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%

$$\begin{aligned} \text{CP} &= 500 \\ \text{SP} &= 650 \\ \text{Profit} &= 150 \\ 150/500 &\cancel{\quad} \end{aligned}$$

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%

$$\begin{aligned} B &= 100 \\ A &= 120 \\ 20/120 &\cancel{\quad} \end{aligned}$$

16.67%

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

- e) 30%
- f) 40%
- g) 50%
- h) 60%

$$\begin{aligned}3+2 &= 5 \\ \frac{3}{5} \times 100\% &= 60\%\end{aligned}$$

$$60\%$$

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%

$$\begin{aligned}2,00,000 &\rightarrow 2,50,000 \\ 50,000 &\rightarrow 25\%\end{aligned}$$

$$25\%$$

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

$$65\%x - 35\%x = 3000$$
$$\frac{30}{100}x = 3000$$
~~$$\frac{30}{100} \cancel{100000\%} = \cancel{30}$$~~~~$$100000$$~~

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%

100 - 30%
70.
75 → 50% ↑
10 + 35% will be 35% more than 50%
So, 35% : 50% is less
42.85% ↑

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

A handwritten diagram illustrating a cycle of percentage changes. It shows a red loop starting at 100, increasing by 50% to 150, and then decreasing by 50% back to 75. To the right, a green double-headed arrow indicates a net change of -25%.

$$\begin{array}{l} 100 + 50\% \\ \downarrow \\ 150 - 50\% = 75 \end{array}$$
$$-25\%$$

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

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

A handwritten diagram illustrating the percentage difference between two lengths. It shows a red double-headed arrow where one segment is labeled 20% longer than the other. Below, a green double-headed arrow indicates a difference of 16.67%.

$$\begin{array}{l} B = 100 \\ A = 120 \\ \downarrow 20\% \\ 6.67\% \end{array}$$
$$16.67\%$$

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

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

$$\begin{aligned} 30\% \text{ of } n &= 90 \\ 60\% \text{ of } n &= ? \\ 60\% \text{ of } n &= 90 \times 2 \\ 180\% &= 90 \times 2 \end{aligned}$$

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

$$\begin{aligned} n \times 25\% &= 5000 \\ n \times \frac{75}{100} &= 5000 \\ n &= 5000 \times \frac{100}{75} \\ n &= 20000 \end{aligned}$$

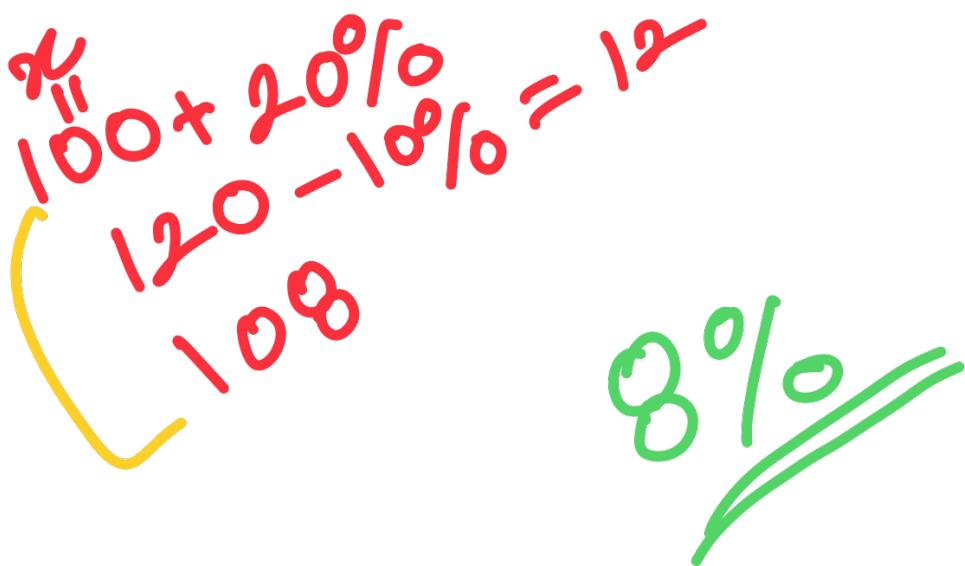
35. The price of petrol increases by 20%. By what percentage should consumption be reduced to maintain the same expense?

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



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



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

$$\begin{aligned} CP &= 100 \\ MP &= 100 + 25\% \\ &= 125 \\ SP &= 125 - 20\% \\ &= 100 \end{aligned}$$

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?

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

$$\begin{aligned} CP &= 500 \\ 500 - 20\% &= 100 \\ SP &= 400 \end{aligned}$$

400

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

$$\begin{array}{c} x = 100 \\ x + 10\% = 110 \\ 110 - 10\% = 99 \\ \hline 100 - 99 \end{array} \quad \begin{array}{c} 110 - 11 \\ 99 \\ \hline 100 - 99 \end{array} \quad \begin{array}{c} / \\ \diagup \quad \diagdown \\ \diagup \quad \diagdown \end{array}$$

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

$$\begin{array}{c} x + 40\% = 220 \\ 100 + 500 \\ 200 \\ \hline 550 \end{array} \quad \begin{array}{c} 220 \\ \diagup \quad \diagdown \\ \diagup \quad \diagdown \end{array} \quad \begin{array}{c} 550 \\ \diagup \quad \diagdown \\ \diagup \quad \diagdown \end{array}$$

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

20 + 30 + 10
60% spent

~~$\frac{60}{100} \times S = 180,000$~~

~~$S = \frac{180,000}{0.6}$~~

~~$S = 300,000$~~

~~$A 5000$~~

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

$100 + 30\% = 130$

$130 - 30\% = 91$

$91 - 100 = -9\%$

~~-9%~~

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

$$\begin{aligned} n &= 10000 \\ \text{1st} \uparrow + 10\% &= 11000 \\ \text{2nd} \uparrow + 10\% &= 12100 \\ \text{3rd} \uparrow + 10\% &= 13310 \end{aligned}$$

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

$$\begin{aligned} A \times 15 &= n \\ B \times 20 &= n \\ 15A &= 20B \end{aligned}$$

X
/ 3 || 2

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

$$CP = 800$$
$$SP = 800 + 800 \times 25\% = 800 + 200 = 1000$$

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%

$$CP = 200$$
$$SP = 250$$

Suppose CP is 100, SP will be 125
Profit % = $\frac{25}{100} \times 100\% = 25\%$

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

$$\begin{aligned} CP \times 20\% &= \text{Profit} \\ CP \times 1 + 1 &= 720 \\ 0.2 \cancel{+ 1} &= 720 \\ \cancel{0.2} &= 600 \\ 1 &= 600 \end{aligned}$$

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

$$\begin{aligned} CP &= 500 \\ 500 - 15\% &= 75 \\ \cancel{500} & \cancel{- 15\%} \\ &= 75 \end{aligned}$$

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

$$\begin{aligned} CP &= 1500 \\ 1500 - 10\% & \\ 1500 - 150 & \end{aligned}$$

$$1350 //$$

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%

$$\begin{aligned} CP &= 100 \\ MP &= 100 + 30\% \\ &= 130 \\ SP &= 130 - 10\% \\ &= 117 \end{aligned} \quad \left. \begin{aligned} \text{Profit} &= 117 - 100 \\ &= 17 \end{aligned} \right\}$$

$$17 //$$