Topic : Percentage & Profit & Loss question Bank

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1. What is 25% of 200?

    a) 25

    b) 50\

    c) 75\

    d) 100

    Answer: 25% of 200 = (25/100) * 200 = 50

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

    a) 100\

    b) 150\

    c) 200\

    d) 250

    Answer:
    Let the number be x.
    40% of x = 80
    (40/100) * x = 80
    x = (80 * 100) / 40 = 200

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

    a) 175

    b) 200

    c) 225\

    d) 250

    Answer
    Let the number be x.
    (75/100) * x = 150
    x = (150 * 100) / 75 = 200

4. What is 15% of 120?

    a) 12\

    b) 15\

c) 18\
d) 20
Answer : 15/100) * 120 = 18

5. If 30% of a number is 90, then the number is:\
    a) 200\
    b) 250\
    c) 300\
    d) 350
Answer:
Let the number be x.
(30/100) * x = 90
x = (90 * 100) / 30 = 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%
Answer:
    Percentage increase = [(New Price - Old Price) / Old Price] * 100
    = [(250 - 200) / 200] * 100 = (50/200) * 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%
Answer :
    Percentage increase = [(50,000 - 40,000) / 40,000] * 100
    = (10,000 / 40,000) * 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%

Answer :

percentage decrease = [(10,000 - 8,000) / 10,000] * 100
= (2,000 / 10,000) * 100 = 20%

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

    a) 10%\
    b) 15%\
    c) 20%\
    d) 25%
    Answer
      percentage decrease = [(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?\

    a) 20%\
    b) 22.5%\
    c) 25%\
    d) 30%
    Answe : Loss % = [(600 - 450) / 600] × 100 = 25%

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
    Answer : 30% of 400 = 120, 40% of 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

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%

Reduction % = (Increase % / (100 + Increase %)) × 100
(25 / 125) × 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?

    a) 28.57%\

    b) 30%\

    c) 33.33%\

    d) 40%

    Let B = 100, then A = 140
    % decrease = [(140 - 100)/140] × 100 = 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

Step 1: Assume the Original Price
Let the original price be ₹100 (for simplicity in percentage calculations).

Step 2: Calculate the Price After a 20% Increase
A 20% increase means the price grows by 20% of its original value.
Increase=20%×100=20Increase=20%×100=20
New Price after Increase=100+20=₹120

Step 3: Calculate the Price After a 10% Decrease
Next, the price decreases by 10%. This decrease is applied to the new price of ₹120.
Decrease=10%×120=12Decrease=10%×120=12
Final Price after Decrease=120−12=₹108

Step 4: Determine the Net Percentage Change
Compare the final price to the original price to find the net change.
Net Change=Final Price−Original Price=108−100=₹8
Net Percentage Change=(Net ChangeOriginal Price)×100=(8100)×100=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

Step 1: Assume the original number is ₹100
- **A 30% increase means the new value = 100+(30% of 100)=100+30=130100 + (30\% \text{ of } 100) = 100 + 30 = 130100+(30% of 100)=100+30=130**
Step 2: Apply a 20% decrease to ₹130
- **A 20% decrease means the new value = 130−(20% of 130)=130−26=104130 - (20\% \text{ of } 130) = 130 - 26 = 104130−(20% of 130)=130−26=104**
Step 3: Find the net percentage change
- **The original number was ₹100, and the final number is ₹104.**
- **The net increase in the number = 104−100=4104 - 100 = 4104−100=4**
- **Percentage increase = 4100×100=4%\frac{4}{100} \times 100 = 4\%1004×100=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

Let Initial Population = 100
After 25% Increase = 125
After 20% Decrease = 125 - (20% of 125) = 125 - 25 = 100
Net Change = 100 - 100 = 0
Percentage Change = 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

Let Initial Price = ₹100
After 40% Increase = ₹140
After 30% Decrease = ₹140 - (30% of 140) = ₹140 - ₹42 = ₹98
Net Change = ₹98 - ₹100 = -₹2
Percentage Change = (-2 / 100) × 100 = -2% (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

Let **Initial Salary = ₹100**
After 20% Increase = ₹120
After 10% Decrease = ₹120 - (10% of 120) = ₹120 - ₹12 = ₹108
Net Change = ₹108 - ₹100 = ₹8
Percentage Change = (8 / 100) × 100 = 8%

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%

Let **Cost Price (CP) = ₹100**
Profit = 25% of CP = ₹25
Selling Price (SP) = CP + Profit = ₹100 + ₹25 = ₹125
SP as a percentage of CP = (125 / 100) × 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\

Marked Price (MP) = ₹500
Discount = 10% of MP = ₹50
Selling Price (SP) = MP - Discount = ₹500 - ₹50 = ₹450
Profit = 8% of Cost Price (CP)
Let **CP = x**
SP = CP + Profit = x + 0.08x = 1.08x
1.08x = ₹450
x = ₹450 / 1.08 = ₹416.67 ≈ ₹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%

Let **Cost Price (CP) = ₹100**
Profit = 20% of CP = ₹20
Selling Price (SP) = CP + Profit = ₹100 + ₹20 = ₹120
Profit Percentage on SP = (Profit / SP) × 100 = (20 / 120) × 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%

Discount=Marked Price − Selling Price=1200−960=240

Discount Percentage=Marked PriceDiscount×100=1200240×100=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%

Profit = SP - CP = 650 - 500 = 150

Profit Percentage=(500 / 150)×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%

If B's income = ₹100, then A's income = ₹120
B's income is less than A's by:
12020×100=16.67%

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

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

total parts = 3 + 2 = 5
Boys percentage = 35×100=60%
(3 /5)*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%

Initial Population = 2,00,000
Final Population = 2,50,000
Increase = 2,50,000 - 2,00,000 = 50,000
Percentage Increase = (Increase / Initial Population) × 100 = (50,000 / 2,00,000) × 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?

    a. 5000

    b. 6000

    c. 8000

    d. 10000

Let Total Votes = x
Winning Candidate's Votes = 65% of x = 0.65x
Losing Candidate's Votes = 35% of x = 0.35x
Difference = 0.65x - 0.35x = 0.30x = 3,000
x = 3,000 / 0.30 = 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?

    a. 30%

    b. 42.85%

    c. 50%

    d. 60%

Let **Original Price = ₹100**
Reduced Price = ₹100 - 30% of ₹100 = ₹70
Required Increase = ₹100 - ₹70 = ₹30
Percentage Increase = (30 / 70) × 100 = 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

Let **Initial Number = 100**
After 50% Increase = 150
After 50% Decrease = 150 - 50% of 150 = 75
Net Change = 75 - 100 = -25
Percentage Change = (-25 / 100) × 100 = -25% (25% decrease)

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

    a.   16.67%

    b.   18%

    c.   20%

    d.   25%

Let **B's Height = 100**
A's Height = 120 (20% taller than B)
Difference = 20
Percentage Difference = (20 / 120) × 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

Let **Number = x**
30% of x = 90 ⇒ 0.30x = 90 ⇒ x = 90 / 0.30 = 300
60% of x = 0.60 × 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

Let **Total Income = x**
Savings = 25% of x = ₹5,000
0.25x = 5,000 ⇒ x = 5,000 / 0.25 = ₹20,000

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

Let **Initial Price = ₹100**
After 20% Increase = ₹120
After 10% Decrease = ₹120 - 10% of ₹120 = ₹108
Net Change = ₹108 - ₹100 = ₹8
Percentage Change = (8 / 100) × 100 = 8%

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

Let **Cost Price (CP) = ₹100**
Marked Price (MP) = CP + 25% of CP = ₹100 + ₹25 = ₹125
Discount = 20% of MP = ₹25
Selling Price (SP) = MP - Discount = ₹125 - ₹25 = ₹100
Profit/Loss = SP - CP = ₹100 - ₹100 = ₹0
Profit/Loss Percentage = 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

Cost Price (CP) = ₹500
Loss = 20% of CP = ₹100
Selling Price (SP) = CP - Loss = ₹500 - ₹100 = ₹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

Let **Initial Salary = ₹100**
After 10% Increase = ₹110
After 10% Decrease = ₹110 - 10% of ₹110 = ₹99
Net Change = ₹99 - ₹100 = -₹1
Percentage Change = (-1 / 100) × 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?

    a. 500

b. 550

c. 600

d. 650

Let total marks = x
Passing marks = 40% of x
40% of x=200+20
0.4x=220⇒x=0.4220=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

Let **Total Salary = x**
Total Expenditure = 20% + 30% + 10% = 60%
Savings = 40% of x = ₹18,000
0.40x = 18,000 ⇒ x = 18,000 / 0.40 = ₹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

Let **Initial Cost = ₹100**
After 30% Increase = ₹130
After 30% Decrease = ₹130 - 30% of ₹130 = ₹91
Net Change = ₹91 - ₹100 = -₹9
Percentage Change = (-9 / 100) × 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?

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

Initial Population = 10,000
After 1st Year = 10,000 + 10% of 10,000 = 11,000
After 2nd Year = 11,000 + 10% of 11,000 = 12,100
After 3rd Year = 12,100 + 10% of 12,100 = 13,310

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

15% of A = 20% of B ⇒ 0.15A = 0.20B
A/B = 0.20 / 0.15 = 4/3
A:B = 4:3

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

Cost Price (CP) = ₹800
Profit = 25% of CP = ₹200
Selling Price (SP) = CP + Profit = ₹800 + ₹200 = ₹1,000

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%

Profit = SP - CP = ₹250 - ₹200 = ₹50
Profit Percentage = (Profit / CP) × 100 = (50 / 200) × 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

Let **Cost Price (CP) = x**
Profit = 20% of CP = 0.20x
Selling Price (SP) = CP + Profit = x + 0.20x = 1.20x
1.20x = ₹720 ⇒ x = ₹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.
a) ₹400
b) ₹425
c) ₹450
d) ₹475

SP=CP−(15% of CP)=500−75=425

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

SP=CP−(10% of CP)=1500−150=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%

30% = 130 ;
130 = 10% = 17%