**Topic : Percentage & Profit & Loss**

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1. What is 25% of 200?
   1. 25
   2. 50\
   3. 75\
   4. 100

Ans: 0.25 \* 200=50

1. If 40% of a number is 80, what is the number?
   1. 100\
   2. 150\
   3. 200\
   4. 250

Ansx = 0.4080​=200

1. 75% of a number is 150. What is the number?
   1. 175
   2. 200
   3. 225\
   4. 250

Ans: 150 / 0.75=200

1. What is 15% of 120?
   1. 12\
   2. 15\
   3. 18\
   4. 20

Ans: 0.15 \* 120=18

1. If 30% of a number is 90, then the number is:\
   1. 200\
   2. 250\
   3. 300\
   4. 350

Ans: x=0.3090​=300

1. The price of a product increases from ₹200 to ₹250. What is the percentage increase?\
   1. 20%\
   2. 25%\
   3. 30%\
   4. 35%

Price Increase=₹250−₹200=₹50

Percentage Increase=(₹200₹50​)×100=25%

1. A salary increases from ₹40,000 to ₹50,000. What is the percentage increase?\
   1. 20%\
   2. 25%\
   3. 30%\
   4. 35%

₹50,000 – ₹40,000 = ₹10,000

(₹10,000 / ₹40,000) × 100 = 25%

1. The population of a town decreased from 10,000 to 8,000. What is the percentage decrease?\
   1. 10%\
   2. 15%\
   3. 20%\
   4. 25%

10,000 – 8,000 = 2,000

(2,000 / 10,000) × 100 = 20%

1. A book's price drops from ₹500 to ₹400. What is the percentage decrease?\
   1. 10%\
   2. 15%\
   3. 20%\
   4. 25%

₹500 – ₹400 = ₹100

(₹100 / ₹500) × 100 = 20%

1. If the cost price of an item is ₹600 and the selling price is ₹450, what is the percentage loss?\
   1. 20%\
   2. 22.5%\
   3. 25%\
   4. 30%

**Determine the loss amount:** Subtract the selling price (S.P.) from the cost price (C.P.):

Loss=C.P.−S.P.=₹600−₹450=₹150\text{Loss} = \text{C.P.} - \text{S.P.} = ₹600 - ₹450 = ₹150Loss=C.P.−S.P.=₹600−₹450=₹150

**Calculate the percentage loss:** Divide the loss by the cost price and multiply by 100:

Loss Percentage=(LossC.P.)×100=(₹150₹600)×100=25%\text{Loss Percentage} = \left( \frac{\text{Loss}}{\text{C.P.}} \right) \times 100 = \left( \frac{₹150}{₹600} \right) \times 100 = 25\%Loss Percentage=(C.P.Loss​)×100=(₹600₹150​)×100=25%

Therefore, the percentage loss is **25%**.

**Answer:** c) 25%

1. ### \*\*Section 3: Percentage Comparison\*\*
2. Which is greater: 30% of 400 or 40% of 300?\
   1. 30% of 400\
   2. 40% of 300\
   3. Both are equal\
   4. Cannot be determined

**Calculate 30% of 400:**

30% of 400 is: 0.30 × 400 = 120

**Calculate 40% of 300:**

40% of 300 is: 0.40 × 300 = 120

Both calculations result in 120.

**Answer:** c) Both are equal

1. A person spends 60% of his income and saves ₹8,000. What is his total income?\
   1. ₹15,000\
   2. ₹18,000\
   3. ₹20,000\
   4. ₹25,000

**Understand the given information:**

* 1. The person spends 60% of his income and saves the remaining 40%.
  2. His savings amount to ₹8,000.

**Set up the relationship:**

* 1. Since savings constitute 40% of his income, we can express this as: Savings=40%×Total Income\text{Savings} = 40\% \times \text{Total Income}Savings=40%×Total Income Given that savings are ₹8,000, the equation becomes: 8,000=0.40×Total Income8,000 = 0.40 \times \text{Total Income}8,000=0.40×Total Income

**Calculate the total income:**

* 1. Solve for Total Income: Total Income=8,0000.40=₹20,000\text{Total Income} = \frac{8,000}{0.40} = ₹20,000Total Income=0.408,000​=₹20,000

Therefore, his total income is ₹20,000.

**Answer:** c) ₹20,000

1. If A is 20% more than B, then B is how much less than A?\
   1. 20%\
   2. 16.67%\
   3. 25%\
   4. 10%

**Express the relationship between A and B:**

* 1. If A is 20% more than B, then: A=B+0.20×B=1.20×BA = B + 0.20 \times B = 1.20 \times BA=B+0.20×B=1.20×B

1. **Calculate the percentage by which B is less than A:**
   1. The difference between A and B is: A−B=1.20×B−B=0.20×BA - B = 1.20 \times B - B = 0.20 \times BA−B=1.20×B−B=0.20×B
   2. To find the percentage by which B is less than A, divide the difference by A and multiply by 100: Percentage less=(A−BA)×100=(0.20×B1.20×B)×100=0.201.20×100\text{Percentage less} = \left( \frac{A - B}{A} \right) \times 100 = \left( \frac{0.20 \times B}{1.20 \times B} \right) \times 100 = \frac{0.20}{1.20} \times 100Percentage less=(AA−B​)×100=(1.20×B0.20×B​)×100=1.200.20​×100
   3. Calculating this gives: 0.201.20×100=16.67%\frac{0.20}{1.20} \times 100 = 16.67\%1.200.20​×100=16.67%

**Answer:** b) 16.67%

1. If the price of sugar is increased by 25%, by how much should the consumption be reduced to maintain the same expense?\
   1. 20%\
   2. 25%\
   3. 30%\
   4. 15%

**Initial Assumptions**:

* 1. Let the initial price of sugar be ₹100 per kg.
  2. Let the initial consumption be 1 kg.
  3. Initial expenditure = Price × Consumption = ₹100 × 1 = ₹100.

**After Price Increase**:

* 1. New price = ₹100 + 25% of ₹100 = ₹100 + ₹25 = ₹125 per kg.

**Maintaining Same Expenditure**:

* 1. To keep the expenditure at ₹100: New consumption = ₹100 ÷ ₹125 = 0.8 kg.

**Calculating Reduction in Consumption**:

* 1. Reduction in consumption = Initial consumption – New consumption = 1 kg – 0.8 kg = 0.2 kg.
  2. Percentage reduction = (0.2 kg ÷ 1 kg) × 100% = 20%.

Therefore, a 20% reduction in consumption is required to maintain the same expenditure. The correct answer is **a) 20%**.

1. If A’s income is 40% more than B’s income, then B’s income is what percentage less than A’s?\
   1. 28.57%\
   2. 30%\
   3. 33.33%\
   4. 40%

**Define Variables**:

* 1. Let B's income be ₹100.
  2. Since A's income is 40% more than B's, A's income = ₹100 + 40% of ₹100 = ₹100 + ₹40 = ₹140.

**Calculate the Difference**:

* 1. Difference in income = A's income – B's income = ₹140 – ₹100 = ₹40.

**Compute the Percentage**:

* 1. Percentage less = (Difference ÷ A's income) × 100 = (₹40 ÷ ₹140) × 100 ≈ 28.57%.

Therefore, B's income is approximately **28.57%** less than A's income. The correct answer is **a) 28.57%**.

1. The price of an item is increased by 20% and then decreased by 10%. What is the net percentage change?\
   1. 8% increase\
   2. 8% decrease\
   3. 10% increase\
   4. 10% decrease

**Initial Assumptions**:

* 1. Let the initial price of the item be ₹100.

**After 20% Increase**:

* 1. New price = ₹100 + 20% of ₹100 = ₹100 + ₹20 = ₹120.

**After 10% Decrease**:

* 1. Decrease amount = 10% of ₹120 = ₹12.
  2. Final price = ₹120 – ₹12 = ₹108.

**Calculating Net Change**:

* 1. Net change = Final price – Initial price = ₹108 – ₹100 = ₹8.
  2. Percentage change = (Net change ÷ Initial price) × 100 = ₹8 ÷ ₹100 × 100% = 8%.

Therefore, the net percentage change is an 8% increase. The correct answer is **a) 8% increase**.

1. A number is increased by 30% and then decreased by 20%. What is the final percentage change?\
   1. 4% increase\
   2. 8% increase\
   3. 10% increase\
   4. 12% increase

**Initial Assumption**:

* 1. Let the initial number be 100.

**After 30% Increase**:

* 1. New value = 100 + 30% of 100 = 100 + 30 = 130.

**After 20% Decrease**:

* 1. Decrease amount = 20% of 130 = 26.
  2. Final value = 130 – 26 = 104.

**Calculating Net Change**:

* 1. Net change = Final value – Initial value = 104 – 100 = 4.
  2. Percentage change = (Net change ÷ Initial value) × 100 = 4 ÷ 100 × 100% = 4%.

Therefore, the final percentage change is a **4% increase**. The correct answer is **a) 4% increase**.

1. If the population of a city increases by 25% and then decreases by 20%, what is the net percentage change?\
   1. 0%\
   2. 5% increase\
   3. 10% decrease\
   4. 5% decrease

When a city's population increases by 25% and then decreases by 20%, the net percentage change is a **5% increase**. Here's the calculation:

**Initial Assumption**:

* + Let the initial population be 100.

**After 25% Increase**:

* + New population = 100 + 25% of 100 = 100 + 25 = 125.

**After 20% Decrease**:

* + Decrease amount = 20% of 125 = 25.
  + Final population = 125 – 25 = 100.

**Calculating Net Change**:

* + Net change = Final population – Initial population = 100 – 100 = 0.
  + Percentage change = (Net change ÷ Initial population) × 100 = 0 ÷ 100 × 100% = 0%.

Therefore, the net percentage change is **0%**, indicating no overall change in population. The correct answer is **a) 0%**.

1. If a price increases by 40% and then decreases by 30%, the final change is:\
   1. 2% increase\
   2. 10% increase\
   3. 10% decrease\
   4. 2% decrease

When a price increases by 40% and then decreases by 30%, the final change is a **2% decrease**. Here's the calculation:

**Initial Assumption**:

* + Let the initial price be ₹100.

**After 40% Increase**:

* + New price = ₹100 + 40% of ₹100 = ₹100 + ₹40 = ₹140.

**After 30% Decrease**:

* + Decrease amount = 30% of ₹140 = ₹42.
  + Final price = ₹140 – ₹42 = ₹98.

**Calculating Net Change**:

* + Net change = Final price – Initial price = ₹98 – ₹100 = -₹2.
  + Percentage change = (Net change ÷ Initial price) × 100 = (-₹2 ÷ ₹100) × 100% = -2%.

Therefore, the final change is a 2% decrease. The correct answer is **d) 2% decrease**.

1. The salary of a person is first increased by 20% and then decreased by 10%. What is the overall percentage change?\
   1. 8% increase\
   2. 10% increase\
   3. 10% decrease\
   4. No change

**Initial Salary:** Let the initial salary be represented as ₹100 (using a base value simplifies calculations).

**After 20% Increase:** Increasing the salary by 20% results in:

* 1. New Salary = ₹100 + (20% of ₹100) = ₹100 + ₹20 = ₹120

**After 10% Decrease:** Decreasing the new salary by 10% results in:

* 1. Final Salary = ₹120 - (10% of ₹120) = ₹120 - ₹12 = ₹108

**Overall Change:** The overall change in salary is:

* 1. Change = Final Salary - Initial Salary = ₹108 - ₹100 = ₹8
  2. Percentage Change = (Change / Initial Salary) × 100 = (₹8 / ₹100) × 100 = 8%

Therefore, the overall percentage change in the salary is an 8% increase.

**Answer:** a) 8% increase

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1. If an article is sold at a profit of 25%, then the selling price is what percentage of the cost price?\
   1. 100%\
   2. 125%\
   3. 150%\
   4. 175%
2. 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?\
   1. ₹400\
   2. ₹420\
   3. ₹450\
   4. ₹460

**Calculate the Selling Price (S.P.)**

The shopkeeper allows a 10% discount on the marked price. Therefore, the selling price is 90% of the marked price:

S.P.=90%×M.P.=0.90×₹500=₹450\text{S.P.} = 90\% \times \text{M.P.} = 0.90 \times ₹500 = ₹450S.P.=90%×M.P.=0.90×₹500=₹450

**Step 2: Relate Selling Price, Cost Price, and Profit**

The shopkeeper earns an 8% profit on the cost price. The relationship between selling price, cost price, and profit percentage is:

S.P.=C.P.+Profit\text{S.P.} = \text{C.P.} + \text{Profit}S.P.=C.P.+Profit

Given that the profit is 8% of the cost price:

Profit=8%×C.P.=0.08×C.P.\text{Profit} = 8\% \times \text{C.P.} = 0.08 \times \text{C.P.}Profit=8%×C.P.=0.08×C.P.

Substituting this into the previous equation:

S.P.=C.P.+0.08×C.P.=1.08×C.P.\text{S.P.} = \text{C.P.} + 0.08 \times \text{C.P.} = 1.08 \times \text{C.P.}S.P.=C.P.+0.08×C.P.=1.08×C.P.

**Step 3: Calculate the Cost Price**

From the above equation:

C.P.=S.P.1.08=₹4501.08≈₹416.67\text{C.P.} = \frac{\text{S.P.}}{1.08} = \frac{₹450}{1.08} \approx ₹416.67C.P.=1.08S.P.​=1.08₹450​≈₹416.67

Rounding to the nearest option, the cost price is approximately ₹420.

**Answer:** b) ₹420

Sources

1. If the profit is 20% of the cost price, then what is the profit percentage on the selling price?
   1. 16.67%\
   2. 18%\
   3. 20%\
   4. 22%

**Define Variables:**

* 1. Let the cost price (C.P.) be ₹100 (using a base value simplifies calculations).
  2. The profit is 20% of the cost price: Profit = 20% of ₹100 = ₹20.

**Calculate Selling Price (S.P.):**

* 1. Selling Price = Cost Price + Profit = ₹100 + ₹20 = ₹120.

**Calculate Profit Percentage Based on Selling Price:**

* 1. Profit Percentage on S.P. = (Profit / Selling Price) × 100 = (₹20 / ₹120) × 100 ≈ 16.67%.

**Answer:** a) 16.67%

1. A product is marked at ₹1,200 and sold for ₹960. What is the percentage discount given?
   1. 15%\
   2. 20%\
   3. 25%\
   4. 30%

**Determine the discount amount:**

* 1. Discount Amount = Marked Price – Selling Price = ₹1,200 – ₹960 = ₹240

**Calculate the discount percentage:**

* 1. Discount Percentage = (Discount Amount / Marked Price) × 100 = (₹240 / ₹1,200) × 100 = 0.20 × 100 = 20%

Therefore, the discount given is 20%.

**Answer:** b) 20%

1. If an article is bought for ₹500 and sold for ₹650, what is the percentage profit?
   1. 20%\
   2. 25%\
   3. 30%\
   4. 35%

**Determine the profit amount:**

* 1. Profit = Selling Price – Cost Price = ₹650 – ₹500 = ₹150

**Calculate the profit percentage based on the cost price:**

* 1. Profit Percentage = (Profit / Cost Price) × 100 = (₹150 / ₹500) × 100 = 0.30 × 100 = 30%

Therefore, the percentage profit is **30%**.

**Answer:** c) 30%

1. .If A’s income is 20% more than B’s, then B’s income is what percentage less than A’s?
   1. 16.67%
   2. 18%
   3. 20%
   4. 25%

**Define Variables:**

* + Let B's income be ₹100 (using a base value simplifies calculations).

**Calculate A's Income:**

* + Since A's income is 20% more than B's, A's income is: A=B+0.20×B=1.20×B=1.20×100=₹120A = B + 0.20 \times B = 1.20 \times B = 1.20 \times 100 = ₹120A=B+0.20×B=1.20×B=1.20×100=₹120

**Calculate the Difference in Income:**

* + The difference between A's and B's income is: A−B=₹120−₹100=₹20A - B = ₹120 - ₹100 = ₹20A−B=₹120−₹100=₹20

**Calculate the Percentage by Which B's Income is Less Than A's:**

* + The percentage difference is: Percentage Difference=(A−BA)×100=(₹20₹120)×100≈16.67%\text{Percentage Difference} = \left( \frac{A - B}{A} \right) \times 100 = \left( \frac{₹20}{₹120} \right) \times 100 \approx 16.67\%Percentage Difference=(AA−B​)×100=(₹120₹20​)×100≈16.67%

Therefore, B's income is approximately 16.67% less than A's income.

**Answer:** a) 16.67%

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

* 1. 30%
  2. 40%
  3. 50%
  4. 60%

In a school where the ratio of boys to girls is 3:2, boys constitute 60% of the total student population.

**Answer:** h) 60%

1. A city’s population increased from 2,00,000 to 2,50,000 in 2 years. What is the percentage increase?
   1. 20%
   2. 25%
   3. 30%
   4. 35%

**Determine the increase in population:**

* 1. Increase = New Population – Original Population = 250,000 – 200,000 = 50,000

**Calculate the percentage increase:**

* 1. Percentage Increase = (Increase / Original Population) × 100 = (50,000 / 200,000) × 100 = 0.25 × 100 = 25%

Therefore, the population increased by 25% over the 2-year period.

**Answer:** b. 25%

1. In an election, a candidate gets 65% of the total votes and wins by 3000 votes. How many total votes were cast?
   1. 5000
   2. 6000
   3. 8000
   4. 9000

**Define Variables:**

* 1. Let the total number of votes be represented by VVV.

**Calculate Votes for Each Candidate:**

The winning candidate received 65% of the votes: Votes for Winner = 0.65×V0.65 \times V0.65×V

The losing candidate received the remaining 35%: Votes for Loser = 0.35×V0.35 \times V0.35×V

**Determine the Margin of Victory:**

* 1. The difference in votes between the winner and the loser is given as 3,000: 0.65V−0.35V=3,0000.65V - 0.35V = 3,0000.65V−0.35V=3,000 0.30V=3,0000.30V = 3,0000.30V=3,000

**Solve for Total Votes:**

* 1. Divide both sides of the equation by 0.30: V=3,0000.30=10,000V = \frac{3,000}{0.30} = 10,000V=0.303,000​=10,000

Therefore, the total number of votes cast in the election was 10,000.

**Answer:** None of the provided options (a. 5,000; b. 6,000; c. 8,000; d. 9,000) are correct. The correct total is 10,000 votes.

1. The price of an article is reduced by 30%. By what percentage must the new price be increased to restore the original price?
   1. 30%
   2. 42.85%
   3. 50%
   4. 60%

When the price of an article is reduced by 30%, the new price is 70% of the original price. To restore the original price, the new price must be increased by approximately 42.86%.

**Answer:** b. 42.85%

1. If a number is increased by 50% and then decreased by 50%, what is the net percentage change?
   1. 0%
   2. 25% decrease
   3. 50% decrease
   4. 75% decrease

When a number is increased by 50% and then decreased by 50%, the net percentage change results in a 25% decrease.

**Answer:** b. 25% decrease

1. If A is 20% taller than B, then B is shorter than A by:
   1. 16.67%
   2. 18%
   3. 20%
   4. 25%

When A is 20% taller than B, B's height is approximately 16.67% shorter than A's height.

**Answer:** a. 16.67%

1. If 30% of a number is 90, what is 60% of the same number?
   1. 120
   2. 150
   3. 180
   4. 200
2. If 30% of a number is 90, then the number is 300. Consequently, 60% of this number is 180.
3. **Answer:** c. 180
4. A person spends 75% of his income and saves ₹5000. What is his total income?
   1. ₹15,000
   2. ₹18,000
   3. ₹20,000
   4. ₹25,000
   5. 0.30×x=90
   6. Solving for xxx: x=900.30=300x = \frac{90}{0.30} = 300x=0.3090​=300

**Calculate 60% of the Number:**

* 1. Now that we know x=300x = 300x=300, calculate 60% of 300: 0.60×300=1800.60 \times 300 = 1800.60×300=180

**Answer:** c. 180

1. The price of petrol increases by 20%. By what percentage should consumption be reduced to maintain the same expense?
   1. 16.67%
   2. 18%
   3. 20%
   4. 25%

To maintain the same expenditure on petrol after a 20% price increase, consumption should be reduced by approximately 16.67%.

**Answer:** a. 16.67%

1. The price of a TV was first increased by 20% and then decreased by 10%. What is the overall percentage change?
   1. 8% increase
   2. 10% increase
   3. 10% decrease
   4. No change
2. **Initial Price:** Let the original price of the TV be ₹100.
3. **After 20% Increase:** The price increases by 20%, so the new price is ₹100 + 20% of ₹100 = ₹100 + ₹20 = ₹120.
4. **After 10% Decrease:** The price decreases by 10% from ₹120, so the new price is ₹120 - 10% of ₹120 = ₹120 - ₹12 = ₹108.
5. **Overall Change:** The final price is ₹108, which is ₹108 - ₹100 = ₹8 less than the original price.
6. **Percentage Change:** The percentage decrease is (₹8 / ₹100) × 100% = 8%.

Therefore, the overall percentage change is an 8% decrease.

1. A shopkeeper marks an item 25% above the cost price and gives a 20% discount. What is his profit/loss percentage?
   1. 0%
   2. 2% profit
   3. 5% profit
   4. 10% loss

**Define Variables:**

* 1. Let the cost price (C.P.) of the item be ₹100 (for simplicity).

**Calculate Marked Price (M.P.):**

* 1. Marked Price = Cost Price + 25% of Cost Price
  2. Marked Price = ₹100 + (25/100) × ₹100 = ₹100 + ₹25 = ₹125

**Apply Discount:**

* 1. Selling Price (S.P.) = Marked Price - 20% of Marked Price
  2. Selling Price = ₹125 - (20/100) × ₹125 = ₹125 - ₹25 = ₹100

**Determine Profit or Loss:**

* 1. Profit/Loss = Selling Price - Cost Price
  2. Profit/Loss = ₹100 - ₹100 = ₹0

**Calculate Profit or Loss Percentage:**

* 1. Profit/Loss Percentage = (Profit/Loss / Cost Price) × 100
  2. Profit/Loss Percentage = (₹0 / ₹100) × 100 = 0%

**Conclusion:** In this scenario, the shopkeeper neither gains nor loses; the profit or loss percentage is 0%.

**Answer:** a. 0%

1. If the cost price of an article is ₹500 and it is sold at a loss of 20%, what is the selling price?
   1. ₹350
   2. ₹375
   3. ₹400
   4. ₹450

**Calculate the Loss:**

* 1. Loss = 20% of C.P. = 0.20 × ₹500 = ₹100.

**Determine the Selling Price:**

* 1. S.P. = C.P. - Loss = ₹500 - ₹100 = ₹400.

**Answer:** c. ₹400

1. If a salary is increased by 10% and then decreased by 10%, what is the final percentage change?
   1. 0%
   2. 1% decrease
   3. 1% increase
   4. 2% decrease

**Initial Salary:** Assume the original salary is ₹100.

**After 10% Increase:** The salary increases by 10%, so the new salary is ₹100 + ₹10 = ₹110.

**After 10% Decrease:** The salary decreases by 10% from ₹110, so the new salary is ₹110 - ₹11 = ₹99.

**Net Change:** The final salary is ₹99, which is ₹1 less than the original salary.

**Percentage Change:** The percentage decrease is (₹1 / ₹100) × 100% = 1%.

Therefore, the overall change is a 1% decrease.

1. A student needs 40% marks to pass. He gets 200 marks and fails by 20 marks. What are the total marks?
   1. 500
   2. 550
   3. 600
   4. 650

**Calculate the Passing Marks:**

* 1. Since the student failed by 20 marks, the passing marks can be calculated as: Passing Marks=Marks Obtained+Marks Shortfall=200+20=220\text{Passing Marks} = \text{Marks Obtained} + \text{Marks Shortfall} = 200 + 20 = 220Passing Marks=Marks Obtained+Marks Shortfall=200+20=220

**Determine Total Marks:**

* 1. The passing marks represent 40% of the total marks. Let TTT be the total marks.
  2. Therefore, 40% of TTT equals 220: 0.40×T=2200.40 \times T = 2200.40×T=220
  3. Solving for TTT: T=2200.40=550T = \frac{220}{0.40} = 550T=0.40220​=550

**Answer:** b. 550

1. 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?
   1. ₹40,000
   2. ₹45,000
   3. ₹50,000
   4. ₹55,000

**Expenditure Breakdown:**

* 1. **Rent:** 20% of salary
  2. **Food:** 30% of salary
  3. **Transport:** 10% of salary
  4. **Total Expenditure:** 20% + 30% + 10% = 60% of salary

**Savings:**

* 1. **Savings:** ₹18,000
  2. **Relation to Salary:** Savings = 40% of salary (since 100% - 60% = 40%)

**Calculate Salary:**

* 1. Let the salary be SSS. Then, 40% of SSS equals ₹18,000: 0.40×S=₹18,0000.40 \times S = ₹18,0000.40×S=₹18,000
  2. Solving for SSS: S=₹18,000/0.40=₹45,000S = ₹18,000 / 0.40 = ₹45,000S=₹18,000/0.40=₹45,000

**Answer:** b. ₹45,000

1. The cost of an item is first increased by 30% and then decreased by 30%. What is the overall percentage change?
   1. 0%
   2. 9% decrease
   3. 9% increase
   4. 15% decrease

**Initial Price:** Let the original price of the item be ₹100.

**After 30% Increase:**

* 1. Increased Price = ₹100 + (30% of ₹100) = ₹100 + ₹30 = ₹130.

**After 30% Decrease:**

* 1. Decreased Price = ₹130 - (30% of ₹130) = ₹130 - ₹39 = ₹91.

**Net Change:**

* 1. Change in Price = Final Price - Initial Price = ₹91 - ₹100 = -₹9.
  2. Percentage Change = (Change in Price / Initial Price) × 100 = (-₹9 / ₹100) × 100 = -9%.

**Answer:** b. 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

Population after 3 years = Current Population × (1 + Growth Rate)^Number of Years

Population after 3 years = 10,000 × (1 + 0.10)^3

Population after 3 years = 10,000 × (1.10)^3

Population after 3 years = 10,000 × 1.331

Population after 3 years = 13,310

**Answer:** a) 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**Set Up the Equation:**

* + 15% of A equals 20% of B: 15100×A=20100×B\frac{15}{100} \times A = \frac{20}{100} \times B10015​×A=10020​×B Simplifying: 15A=20B15A = 20B15A=20B

**Solve for the Ratio A:B:**

* + Divide both sides of the equation by 5: 3A=4B3A = 4B3A=4B
  + Divide both sides by B: AB=43\frac{A}{B} = \frac{4}{3}BA​=34​
  + Therefore, the ratio A:B is 4:3.

**Answer:** 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 (C.P.):** ₹800
  + **Profit Percentage:** 25%

**Calculate Profit:**

* + **Profit:** 25% of ₹800 = (25/100) × ₹800 = ₹200

**Determine Selling Price (S.P.):**

* + **Selling Price:** C.P. + Profit = ₹800 + ₹200 = ₹1,000

**Answer:** b) ₹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 Calculation:**

* + Profit = Selling Price (S.P.) – Cost Price (C.P.) = ₹250 – ₹200 = ₹50

**Profit Percentage Calculation:**

* + Profit Percentage = (Profit / Cost Price) × 100 = (₹50 / ₹200) × 100 = 0.25 × 100 = 25%

**Answer:** b) 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

* + **Selling Price (S.P.):** ₹720
  + **Profit Percentage:** 20%

**Calculate Cost Price (C.P.):**

* + Since Profit Percentage = (Profit / Cost Price) × 100, we can express Profit as 20% of C.P., i.e., 0.20 × C.P.
  + Therefore, S.P. = C.P. + Profit = C.P. + 0.20 × C.P. = 1.20 × C.P.
  + Rearranging, C.P. = S.P. / 1.20 = ₹720 / 1.20 = ₹600.

**Answer:** a) ₹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

**Loss Calculation:**

* + Loss Percentage = 15%
  + Loss Amount = 15% of ₹500 = 0.15 × ₹500 = ₹75

**Selling Price Calculation:**

* + Selling Price (S.P.) = Cost Price (C.P.) – Loss Amount = ₹500 – ₹75 = ₹425

**Answer:** b) ₹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

**Loss Calculation:**

* + **Loss Percentage:** 10%
  + **Loss Amount:** 10% of ₹1,500 = (10/100) × ₹1,500 = ₹150

**Selling Price Calculation:**

* + **Selling Price (S.P.):** C.P. – Loss Amount = ₹1,500 – ₹150 = ₹1,350

**Answer:** c) ₹1,350

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%

1. **Cost Price (C.P.):** Assume the cost price of the goods is ₹100.
2. **Marked Price (M.P.):** The trader marks his goods at 30% above the cost price. Therefore, the marked price is: M.P.=100+30% of 100=100+30=₹130\text{M.P.} = 100 + 30\% \text{ of } 100 = 100 + 30 = ₹130M.P.=100+30% of 100=100+30=₹130
3. **Discount:** The trader allows a 10% discount on the marked price. The discount amount is: Discount=10% of 130=0.10×130=₹13\text{Discount} = 10\% \text{ of } 130 = 0.10 \times 130 = ₹13Discount=10% of 130=0.10×130=₹13
4. **Selling Price (S.P.):** After applying the discount, the selling price is: S.P.=130−13=₹117\text{S.P.} = 130 - 13 = ₹117S.P.=130−13=₹117
5. **Gain:** The gain is the difference between the selling price and the cost price: Gain=117−100=₹17\text{Gain} = 117 - 100 = ₹17Gain=117−100=₹17
6. **Gain Percentage:** The gain percentage is calculated as: Gain Percentage=(GainC.P.)×100=(17100)×100=17%\text{Gain Percentage} = \left( \frac{\text{Gain}}{\text{C.P.}} \right) \times 100 = \left( \frac{17}{100} \right) \times 100 = 17\%Gain Percentage=(C.P.Gain​)×100=(10017​)×100=17%

Therefore, the trader's gain percentage is **17%**.

**Answer:** a) 17%