Percentage and Profit & Loss

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Q1 What is 25% of 200?

⇒ 25% of 200 = $200 \times \dfrac{1}{4}$

$= 50\%$

b) 50%

Q2 If 40% of number is 80 what is the number?

⇒ $\dfrac{40}{100} = \dfrac{80}{x}$

$40x = 80 \times 100$

$x = 8000 / 40$

$x = 200$

c) 200%

Q3 75% of number 150 what is the number

⇒ $\dfrac{75}{100} = \dfrac{150}{x}$

$75x = 150 \times 100$

$x = 15000 / 75$

$x = 200$

b) 200%

Q4 What is 15% of 120

10% of 120 is 12

5% of 120 is 6

So 15% = 12 + 6 = 18

c) 18%

Q5 If 30% of number is 90 then the number is

$\dfrac{30}{100} = \dfrac{90}{x}$

$30x = 9000$

$x = 9000 / 30 = 300$

c) 300

Q6 The price of a product increase from ₹200 to ₹250

What is percentage increase?

$\Rightarrow$ 200 $\xrightarrow{+}$ 250

50%

$\dfrac{50}{200}$ = 25% increase

b) 25%

Q7 A salary increase from ₹40000 to ₹50000 What is the

percentage increase?

$\Rightarrow$ 40000 $\rightarrow$ 50000   10000 increase

$\dfrac{10000}{40000} = \dfrac{1}{4}$ = 25% increase

b) 25% increase

Q8 The population of a town decrease from 10,000 to 8000

what is the percentage decrease?

$\Rightarrow$ 2000 decrease

$\dfrac{2000}{10000} = \dfrac{2}{10}\dfrac{1}{5}$ = 20%

a) 20%

Q9 A book price drop from ₹500 to ₹400 what is the percentage

decrease?

$\Rightarrow$ ₹100 decrease $\dfrac{100}{500} = \dfrac{1}{5}$ = 20%

a) 20%

Q10 Which is greater 30% of 400 or 40% of 300?

$\Rightarrow$ 10% of 400 = 40   10% of 300 = 30

so 30% of 400 = 120   40% of 300 = 120

so both are same

C) both are equal

Q10 If the cost price of an item is ₹600 and, the selling price is ₹450 what is percentage Loss

⇒ Loss 150 so $\frac{150}{600} - \frac{1}{4}$ = 25% Loss

Q12 A person spend 60% of his income and save ₹8000 what is his total income

⇒ 60% income spend
40% Save   Save ₹8000

$\frac{40}{100} = \frac{8000}{x}$

40x = 800000

$x = \frac{800000}{40}$ 20000

c) ₹20,000

Q13 If A is 20% more than B and then B is how much less than A

⇒ A +20% = B

B $\frac{20}{120} = \frac{1}{6}$ = 16·67%

b) 16·67%

Q14 if the price of sugar increased by 25% by how much should the consumption be reduced to maintain the same expense?

⇒ A → B   ∴ 100 → 120 → 100

$\frac{x}{120} \times 100 \div \frac{x}{7} \times 100$ + 25.57%

100 $\xrightarrow{25\%}$ 125 $\xrightarrow{25}$ 100

$\frac{25}{125} \times 100 = \frac{1}{5} \times 100$ = 20%

Q15 If A's income is 40% more than B's Income B's income is what percentage less than A's?

⇒ A → 140% $\frac{40}{140} \times 100 = \frac{2}{7} \times 100$ = 28.57%
B → 100%

a) 28.57%

Q16 The prise of an item is increased by 20% and then decreased by 10% what is net percentage change?

⟹ $100 \xrightarrow{+20\%} 120 \xrightarrow{-10\%} (120-12) \rightarrow 108$

∴ 8% increase

a) 8% increase

Q17 A number is increased by 30% and decreased by 20% what is the final percentage change?

⟹ $100 \xrightarrow{30\uparrow} 130 \xrightarrow{20\%} 130-26 = 104\%$ ∴ 4% increase

b) 4% increase.

Q18 If the population of a city increases by 25% and then decrease by 20% what is the net persentage change?

⟹ $100\% \xrightarrow{25\uparrow} 125 \xrightarrow{-20\%} 125 - \cancel{5725} 25 = 100\%$

∴ a) 0%

Q19 If a price increased by 40% and then decreased by 30% the final change is

⟹ $100 \xrightarrow{+40} 140 \rightarrow 140 - 42 = 98\%$

∴ d) 2% decrease

Q20 The salary of a person is first increased by 20% and then by 10% what is the overall persentage change?

⟹ $100 \xrightarrow{+20\%} 120 \xrightarrow{-10\%} 1\cancel{20} - 12 = 108\%$

∴ a) 8% increase

Q21 If an article is sold at a profit of 25% then the selleing price is what persentage of the cost price?

⟹ $100 \xrightarrow{+25} 125\%$

b) 125%

Q22 A shopkepee allows a discound of 10% on the marked price and still makes a profit of 8% if the marked price is ₹500 what is the cost price

⟹ $\cancel{100} \xrightarrow{45°} \cancel{100\%}$ $\cancel{100 \ 100} = \cancel{100 \times 100}$ $500 \xrightarrow{-10\%} 450$

$\cancel{100 \ 100} \% ∴$ b) 420 Rs

Q24 A product is marked at ₹1200 and Sold for ₹960 what
is persentage discount given by

⟹ $1200 - 960 = 240$

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

b) 20%

Q25 If an article is brought for ₹500 and sold for 650 what
is percentage profit

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

c) 30%

Q26 If A's income is 20% more than B's then B's income is
what percentage less than A's ?

⟹ $\frac{100}{A's} \longrightarrow \frac{120}{A's}$

$$\frac{20}{120_6} \times 100 = 16.67\%$$

a) 16.67%

Q27 If the ratio of boys to girls in school 3:2 what persentage
of total student are boy's ?

⟹ 3 : 2

$30\% : 20\% = 50\%$

$\times 60 : 40\% = 100$
   b   8

h) 60%

Q28 A city's population increased from 2,00,000 to 2,50,000 in
2 years what persentage increase ?

⟹ 50,000 increased $\frac{50,000}{200,000} = \frac{1}{4} \times 100 = 25\%$

b) 25%

Q 29 In an election, a candidate get 65% of the total votes and win by 3000 votes How many total votes were cast

⇒ 65% win

35%   65-35 = 30% = 3000

$\frac{30}{3000} = \frac{100}{x}$; $3x = 30000$; $x = \frac{30000}{3} = 10000$

Q30 The price of an article is reduced by 30% by what percentage must the new price be increased to restore original price

⇒ 100 $\xrightarrow{-30\%}$ 70%

$\frac{30}{70} \times 100 = \frac{300}{7} = 42.85$

b) 42.85%

Q31 If a number is increased by 50% and then decrease by 50% what is the net persentage change

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

∴ net prercentage change is 25%

c) 50% decrease

Q33 If 30% of a number is 90 what 60% of the same number

$\frac{30}{x90} = \frac{60}{x} =$

$32x = 9000$ $\frac{30}{90}_3 = \frac{60}{x}$ so $x = 60 \times 3$

$x = \frac{9000}{30} = 300$ $x = 180$

c) 180

Q34 A person spends 75% of his income and save ₹ 5000 what is his total income

⇒ $\frac{25\%}{100} = \frac{5000}{x}$

$25x = 500000 = \frac{500000}{25} = 20000$

c) ₹ 20000

35 The price of petrol increase by 20% By what percentage should
Consumtion be reduced to maintain the same expance

⟹ 100 $\xrightarrow{+20\%}$ 120 ⟶ 100 $\frac{20}{120} \times 100°$ = $\frac{1}{6} \times 100 = \frac{100}{6}$

a) 16.67

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

⟹ 100 $\xrightarrow{+20}$ 120 $\xrightarrow{-10\%}$ (120 -12) ⟶ 108

a) 8%

37 Shopkeper marks an item 25% above the cost price 20%
discount what is his profit/loss percentage

⟹ 100 $\xrightarrow{+25\%}$ 125 $\xrightarrow{-20\%}$ (125 - 25) = 100

a) 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?

⟹ 500 $\xrightarrow{-20\%}$ 400
  c.p

  c ₹ 400

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

⟹ 100 $\xrightarrow{+10\%}$ 110 $\xrightarrow{-10\%}$ (110 - 11) ⟶ 99

b) 1% decrease

40) A student needs 40% marks to pass He gets 200 marks and fails
by 20 marks what are the total marks

⟹ 200 + 20 = 220 ⟷ 40%

$\frac{220}{40} = \frac{20}{100}$: $\frac{11}{2} = x$; $\frac{1100}{2} = x$

b) 550

41 A man spend 20% of his salary on rent 30% on food 10% on transport if he saves ₹18000, what his salary

⟹ 20 + 30 + 10 = 60% spend

$$\frac{40\%}{100} = \frac{18000}{x}$$

$$40x = 1800000 = 45000$$

b) 45000 Rs

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

⟹ $100 \xrightarrow{+30\%} 130 \xrightarrow{-30\%} (130-39) \rightarrow 91$

b) 9% decrease

43 The population of the town increase by 10% every year if the current population is 10000 what will it be after 3 years

⟹ $10000 \xrightarrow{+10\%} 11000 \xrightarrow{+10\%} 12100 \xrightarrow{+10\%} 13310$

a) 13310

44

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

⟹ $A:B = 20^4 : 15^3 = 4:3$

b) 4:3

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

⟹ $800 \xrightarrow{25\%} (800+200) \longrightarrow 1000$

b) ₹1000

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

⟹

CP	SP	25%
200	250	

b) 25%

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

⇒ $x \xrightarrow{+20\%} 720 \longrightarrow x$ $1/6 \times 720 = 120$

$100 \xrightarrow{+20\%} 120 \longrightarrow 100$

$\dfrac{20}{120} \times 100 = 1/6 \times 100 = \dfrac{100}{6} = 16.67 = 600$

d) ₹ 700

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

⇒ $500 \xrightarrow{-15\%} \left(\dfrac{10\% + 5\%}{50 + 25} \right) \longrightarrow 500 - 75 = 425$

b) ₹ 425

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

⇒ $1500 \xrightarrow{-10\%} 1350$ c) 1350

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

⇒ $100 \xrightarrow{+30\%} 130 \xrightarrow{-10\%} 117$

∴ 17% gain

∴ a) 17%