

# Percentage & Profit & Loss. Assignment

1] What is 25% of 200?

[Name- Sanika Karade]

→ Percent × Whole = Part

$$\frac{25}{100} \times 200 = \text{Part}$$

$$= 50$$

Option B → 50 //

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

$$\frac{40}{100} \times x = 80$$

$$x = \frac{80 \times 100}{40}$$

$$x = 200$$

Option C → 200 //

3] 75% of a number is 150. What is the no.?

$$\frac{75}{100} \times x = 150$$

$$x = \frac{150 \times 100}{75}$$

$$x = 200$$

Option b → 200 //

4] What is 15% of 120?

$$\frac{15}{100} \times 120 = x$$

$$x = 18$$

Option c → 18 //

5] 30% of a number is 90. Then number is

$$\rightarrow \frac{30}{100} \times x = 90$$
$$x = \frac{90 \times 100}{30}$$
$$x = 300$$

Option C  $\rightarrow 300 \swarrow$

6] Price of product increased from ₹ 200 to 250.  
Find % increase.

$$\rightarrow \text{Change \%} = \frac{250 - 200}{200} \times 100$$
$$= \frac{50}{200} \times 100$$
$$= 25\%$$

Option b  $\rightarrow 25\% \uparrow$

7] Salary increased from ₹ 40,000 to ₹ 50000.  
Find % increase

$$\rightarrow \text{Change \%} = \frac{50000 - 40000}{40000} \times 100$$
$$= \frac{10000}{40000} \times 100$$
$$= 25\%$$

Option b  $\rightarrow 25\% \uparrow$

8] Population of town decreased from 10,000 to 8000  
Percentage decrease?

$$\rightarrow \text{Change \%} = \frac{10000 - 8000}{10000} \times 100$$
$$= \frac{2000}{10000} \times 100$$
$$= 20\%$$

Option c  $\rightarrow 20\% \downarrow$

9] book price drops from ₹500 to 400. % decrease?

$$\rightarrow \text{Change \%} = \frac{500 - 400}{500} \times 100$$
$$= \frac{100}{500} \times 100$$
$$= 20\% \downarrow$$

Option C  $\rightarrow$  20%.  $\checkmark$

10] Cost price of an item is ₹600 and the selling price ₹450. Percentage loss.

$$\rightarrow \% \text{ Loss} = \frac{600 - 450}{600} \times 100$$
$$= \frac{150}{600} \times 100$$
$$= 25\% \downarrow$$

Option C  $\rightarrow$  25%.  $\checkmark$

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

$$\rightarrow \frac{30}{100} \times 400 = 120$$

$$\frac{40}{100} \times 300 = 120$$

Option C  $\rightarrow$  Both are equal,

12] Person spends 60% of his income & saves ₹8000. What is total income?

$$\rightarrow I = E + S \quad 100 = 60 + S \quad S = 40\%$$

$$\frac{40}{100} x = 8000 \quad x = \frac{8000}{2000} \times \frac{100}{40}$$
$$x = 20,000$$

Option C  $\rightarrow$  20000  $\checkmark$

- 13] A is 20% more than B, B is how much less than A?  
 $\rightarrow B = 100$   
 $A = 120$

$$\frac{120 - 100}{120} \times 100$$

$$\frac{\frac{20}{10}}{\frac{100}{3}} \times \frac{5}{100} = \frac{50}{3} = 16.67\%$$

Option b  $\rightarrow 16.67\%$

- 14] Price of sugar is increased by 25%. by how much should the consumption be reduced to maintain same expense.

$$\rightarrow P = 100 \quad C = 100 \quad E = 100 \times 100 = 10000$$

$$P_2 = 125 \quad C_2 = ? \quad E = 10000$$

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

Option a  $\rightarrow 20\%$ .

- 15] A's income is 40% more than B's income. B's income is what percentage less than A's?

$$\rightarrow B = 100$$

$$A = 140$$

$$\frac{40}{140} \times \frac{5}{100} = \frac{200}{7} = 28.57\%$$

Option A  $\rightarrow 28.57\%$

[6] Price of an item is increased by 20%. & then decreased by 10%. Net percentage change?

→

$$\begin{array}{r} 100 \\ \downarrow +20\% \\ 120 \end{array}$$

$$\begin{aligned} \text{Increase price} &= 120 - 100 \\ &= 20 \end{aligned}$$

$$\begin{array}{r} 120 \\ \downarrow -10\% \\ 108 \end{array}$$

$$\begin{aligned} \text{net \% increase} &= \frac{20}{100} \times 100 \\ &= 20\% \uparrow \end{aligned}$$

108

option A → 20% increase

[7] Number is increased by 30% & then decreased by 20%. Final percentage change?

→

$$\begin{array}{r} 100 \\ \downarrow +30\% \\ 130 \end{array}$$

$$130 - 100 = 30$$

$$\begin{array}{r} 130 \\ \downarrow -20\% \\ 104 \end{array}$$

$$\% \text{ change} = \frac{30}{100} \times 100$$

→ 4% ↑

104

option a → 4% increase

[8] Population of a city increases by 25% & then decreases by 20%. net percentage change?

→

$$\begin{array}{r} 100 \\ \downarrow 25\% \\ 125 \end{array}$$

$$125 - 100 = 25$$

$$\begin{array}{r} 125 \\ \downarrow -20\% \\ 100 \end{array}$$

$$\% \text{ change} = 25 - 20 = 5$$

option a → 5%

19] If a price increased by 40% and then decreased by 30% then final change is -

$$\rightarrow 100 \quad \text{change} \rightarrow 98 - 100 = -2$$

$$\downarrow +40\%$$

$$140$$

$$\downarrow -30\%$$

$$98$$

$$\% \text{ change} = \frac{-2}{100} \times 100 \\ = -2\%$$

option d  $\rightarrow$  2% decrease

20] Salary of a person first increased by 20% then decreased by 10%. Overall % change?

$$\rightarrow 100 \quad \text{change} = 108 - 100 = 8$$

$$\downarrow +20\%$$

$$120$$

$$\downarrow -10\%$$

$$108$$

$$\% \text{ change} = \frac{8}{100} \times 100$$

$$= 8\% \uparrow$$

option a  $\rightarrow$  8% increase

21] Article is sold at the profit of 25%. then SP . percentage of C.P.

$$\rightarrow 100 \quad \frac{\text{SP}}{\text{CP}} \times 100$$

$$\downarrow +25\%$$

$$125$$

$$\frac{125}{100} \times 100$$

$$= 125\%$$

option b  $\rightarrow$  125%

22] Discount of 10% on marked price & still profit of 8%. Marked price is ₹ 500. CP?

$$\begin{array}{l} 500 \\ \downarrow -10\% \\ 450 \end{array}$$

$$CP = \frac{450 \times 100}{108}$$

$$= \frac{1250}{3}$$

$$= ₹ 416.67$$

$$\text{Profit \%} = 8 = \frac{450 - CP}{CP} \times 100$$

$$\left( \frac{450}{CP} - 1 \right) \times 100 = 8$$

$$\frac{450}{CP} = \frac{108}{100}$$

$$\text{option } \rightarrow 416.67\%$$

23] Profit is 20% of CP, what is % on SP?

⇒ Let CP = 100

$$SP = 120$$

$$\text{Profit \%} = \frac{\frac{20}{100}}{\frac{120}{100}} \times 100 = \frac{50}{3} = 16.67\%$$

$$\text{option a } \rightarrow 16.67\%$$

24] Marked at ₹ 1200 & sold for ₹ 960.

∴ discount given?

$$\begin{aligned} \Rightarrow \% \text{ discount} &= \frac{1200 - 960}{1200} \times 100 \\ &= \frac{240}{1200} \times 100 \\ &= 20\% \end{aligned}$$

$$\text{option b } \rightarrow 20\%$$

25] Article bought for ₹ 500 & sold for ₹ 650. % profit?

$$\begin{aligned} \Rightarrow \% \text{ profit} &= \frac{650 - 500}{500} \times 100 \\ &= \frac{150}{500} \times 100 \\ &= 30\% \end{aligned}$$

$$\text{option c } \rightarrow 30\%$$

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

$$\rightarrow B = 100$$

$$A = 120$$

$$\frac{120 - 100}{120} \times 100$$
$$\frac{20}{120} \times 100 = \frac{5}{3} = 16.67\%$$

option A  $\rightarrow 16.67\%$

27] Ratio of boys to girls is 3:2. % of the total students are boys?

$\rightarrow$  Ratio 3:2

$$\frac{3}{5} \times 100 = 60\%$$

option d  $\rightarrow 60\%$

28] Population increased from 2,00,000 to 2,50,000 in 2 yrs. % population increase?

$$\% \text{ increase} = \frac{2,50,000 - 2,00,000}{2,00,000} \times 100$$

$$= \frac{50,000}{2,00,000} \times 100$$

$$= 25\%$$

option b  $\rightarrow 25\%$

29] Candidate gets 65% of total votes & wins at 3000 votes, total votes were cast?

$$\Rightarrow .65\% \text{ of } x - 35\% \text{ of } x = 3000$$
$$30\% \text{ of } x = 3000$$

$$\frac{30}{100} \text{ of } x = 3000$$

$$x = \frac{3000 \times 100}{30}$$

$$x = 10000 \quad \text{option } \rightarrow 10000\%$$

30] Price reduced by 30%. By what % must new price be increased to restore original price.

$$\Rightarrow 100 \quad 100 - 70 = 30.$$

$$\downarrow - 30\%.$$

$$70$$

$$\downarrow + ?$$

$$100$$

$$\text{option b } \rightarrow 42.85\%$$

$$\frac{30}{70} \times 100$$

$$= 42.85\%$$

31] No. is ↑ by 50%. & then ↓ 50%. % change=?

$$100 \quad 75 - 100 = -25$$

$$\downarrow + 50\%.$$

$$\% \text{ change} = -\frac{25}{100} \times 100$$

$$150$$

$$\downarrow - 50\%.$$

$$= -25 \downarrow$$

$$75. \quad \text{option b } \rightarrow 25\% \text{ decrease}$$

32] A is 20% taller than B, B is shorter than by

$$\Rightarrow B = 100 \quad \frac{+20}{20} \times 100 = \frac{50}{3}$$
$$A = 120 \quad \frac{+20}{20} \times 100 = 16.67\%$$

$$\text{option a } \rightarrow 16.67\%$$

33] 30% of a no. is 90, what is 60% of same no.

→

$$\frac{30}{100} \times x = 90$$

$$x = \frac{3}{4} \times 100$$

$$x = 300$$

$$\frac{60}{100} \times 300$$

$$= 180$$

option c → 180

34] A person spends 75% of income & saves ₹ 5000 total income = ?

→ 75% → exp      25 → savings = 5000

$$\frac{25}{100} \times x = 5000$$

$$x = \frac{5000 \times 100}{25}$$

$$x = 20,000$$

option c → 20,000

35] Price ↑ by 20%. By %. should consumption reduced to maintain same expense?

$$\rightarrow P = 100 \quad E = 100$$

$$P_2 = 120 \quad E_2 = 100$$

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

option a → 16.67%

36] Price of TV ↑ by 20% & then ↓ by 10%. overall percentage change?

$$\rightarrow 100 \quad \text{increase price} = 108 - 100$$

$$\downarrow +20\%$$

$$120$$

$$\downarrow -10\%$$

$$108$$

$$\% \text{ change} = \frac{8}{100} \times 100$$

$$= 8\% \text{ g}$$

option a → 8% increasing

37) Mark an item 25% above the CP & give 20% discount what is profit/loss percentage?

$$\rightarrow CP = 100$$
$$\downarrow +25\%$$
$$MP = 125$$
$$\downarrow -20\%$$
$$100$$
$$\% \text{ loss} = 0\%$$

option a  $\Rightarrow 0\% \approx$

38) CP of article is ₹ 500 & sold at loss of 20%. SP?

$$\rightarrow CP = 500$$

$$\text{Loss} = \frac{CP - SP}{CP} \times 100$$
$$\frac{SP}{500} = 1 - \frac{1}{5} = \frac{4}{5}$$

$$\frac{20}{100} = 1 - \frac{SP}{500}$$

$$SP = \frac{4}{5} \times \frac{500}{100} = 400$$

option c  $\Rightarrow 400 \approx$

39) Salary ↑ by 10%, ↓ by 10%. % change?

$$\rightarrow 100$$
$$\downarrow +10\%$$
$$99 - 100 = -1$$
$$\text{Decreased by } 1\% \approx$$

$$110$$

$$\downarrow -10\%$$

$$99$$

option  $\Rightarrow b$ . 1% decrease

40) Student needs 40% marks to pass. He gets 200 marks & fails by 20 marks. Total marks?

$$\rightarrow 200 + 20 = 220 \rightarrow 40\%$$
$$x = \rightarrow 100\%$$

$$x = \frac{100 \times 220}{40}$$

$$= 550.$$

option b  $\Rightarrow 550 \approx$

41] Spend 20% of salary on rent, 30% on food, 10% on transport. If he saves ₹ 18,000 what is his salary?

$$\rightarrow \text{Total \% spent} \rightarrow 20 + 30 + 10 \\ = 60\%$$

40% saved  $\Rightarrow$  ₹ 18,000

$$\frac{40}{100} \times 18000 \quad \frac{40}{100} \times x = 18000 \\ x = \frac{18000 \times 100}{4000} \\ x = 45000$$

option b  $\rightarrow$  ₹ 45,000 //

42] cost  $\uparrow$  30% &  $\downarrow$  30%, % change = ?

$$\rightarrow 100 \quad 91 - 100 = -9 \\ \downarrow +30\%.$$

$$130 \quad \% \text{ change} = \frac{-9}{100} \times 100 \\ \downarrow -30\%.$$

91      9% decrease

Option b  $\rightarrow$  9% decrease

43] population  $\uparrow$  10% every yr. Current population 10,000. What will it be after 3 yrs.

$$\rightarrow 10,000 \xrightarrow{+10\%} 11000 \xrightarrow{+10\%} 12100 \xrightarrow{+10\%} 13310.$$

option a  $\rightarrow$  13,310 //

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

$$\rightarrow 0.15A = 0.20B$$

$$\frac{0.15A}{0.05} = \frac{0.20B}{0.05}$$

$$3A = 4B$$

$$\frac{A}{B} = \frac{4}{3}$$

option b  $\rightarrow$  4:3 //

45] CP = ₹ 800 profit is 25%. SP = ?.

$$\rightarrow SP = \frac{125}{100} \times 800$$

$$SP = 1000$$

option b  $\rightarrow 1000$

46] CP = ₹ 200, SP = ₹ 250. profit % = ?

$$\rightarrow \text{Profit} = 250 - 200 \\ = 50.$$

$$P\% = \frac{50}{200} \times 100 \\ = 25\%.$$

option b  $\rightarrow 25\%$

47] sells an article for ₹ 750. Profit 20%. CP = ?

$$\rightarrow P\% = \frac{720}{CP} - 1$$

$$\frac{20}{100} = \frac{720}{CP} - 1$$

$$CP = 720 \times \frac{5}{6} \\ = 600 \quad \text{option a} \rightarrow 600$$

48] sells an item at loss 15%, CP = ₹ 500 SP = ?

$$\rightarrow SP = \frac{85}{100} \times 500$$

$$SP = 425$$

option b  $\rightarrow 425$

49] Purchased cycle ₹ 1500 sold loss of 10%.  
SP = ?

$$\rightarrow SP = \frac{90}{100} \times 1500 \\ = 1350$$

option c  $\rightarrow 1350$

50] Trader marks goods at 30% above CP  
if allows discount of 10%. gain percent?

→ 100

$$\downarrow +30\%$$

$$117 - 100 = 17.$$

130

$$\downarrow -10\%$$

117

$$\% \text{ gain} = \frac{17}{100} \times 100 \\ = 17\%$$

option a → 17% //