

1. What is 25 % of 200 ?

Solⁿ

$$\frac{25}{100} \times 200$$

$$= 50$$

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2. If 40 % of a number is 80, what is the no.?

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

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

$$x = 200$$

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3. 75 % of a number is 150.

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

x

$$x = \frac{15000}{75}$$

$$x = 200$$

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4. What is 15% of 120 ?

$$\rightarrow \frac{15}{100} \times 120$$

$$= \frac{36}{2}$$

$$= 18$$

5. If 30% of a number is 90, then number ?

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

$$30x = 9000$$

$$x = 300$$

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

$$\rightarrow \quad \text{₹ 200} \quad \text{₹ 250}$$

$$= \frac{50}{200} \times 100$$

$$= 25\%$$

$$\frac{\text{difference}}{\text{old value}} \times 100$$

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

→ 40,000 50,000

$$= \frac{10000}{40000} \times 100$$

$$\frac{\text{difference}}{\text{old value}} \times 100$$

$$= 25\%$$

8. The population of a town decreased from 10,000 to 8,000. What is the percentage decrease?

→ 10,000 8,000

$$= \frac{2000}{10000} \times 100$$

$$\frac{\text{diff}}{\text{old value}} \times 100$$

$$= 20\%$$

8. The population of a town decreased from 10,000 to 8000.

$$\rightarrow \quad 10,000 \quad 8,000$$

$$= \frac{2000}{10000} \times 100$$

$$= 20 \%$$

9. A book's price drops from ₹500 to ₹400.
what is % decrease?

$$\rightarrow \quad ₹500 \quad ₹400$$

$$= \frac{100}{500} \times 100$$

$$= 20 \%$$

10. If the cp of an item is ₹600 & sp is ₹450,
what is % loss?

$$\begin{aligned} \rightarrow L &= cp - sp \\ &= 600 - 450 \\ &= 150 \end{aligned}$$

$$L\% = \frac{150}{600} \times 100$$

$$L\% = 25 \%$$

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

$$\rightarrow \frac{30}{100} \times 400 \quad \text{or} \quad \frac{40}{100} \times 300$$

$$(1) \quad 120 \quad \text{or} \quad 120$$

\rightarrow both are equal

12. A person spends 60% of his income & saves 8000. what is total income

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

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

$$(1) \quad \therefore x = 20000$$

13. If A is 20% more than B, then B is how much less than A?

$$\rightarrow A + 20\% = B$$

$$B = 100\%$$

$$A = 120\%$$

$$\frac{20}{120} = \frac{1}{6} = 16.67\%$$

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

→

$$100 \longrightarrow 125$$

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

15. A's income is 40% more than B's income, then B's income is what percentage less than A's.

→

$$100 \xrightarrow{40} 140 \xrightarrow{40} 100$$

$$\frac{40}{140} \times 100 = \frac{2}{7} \times 100 = 28.57\%$$

16.

→

$$100 \longrightarrow 120 \longleftarrow 108$$

$$\frac{10}{100} \times 120$$

Ans :- 8% increase

17.

→

$$100 \xrightarrow{30\% \uparrow} 130 \xrightarrow{20\% \downarrow} 104$$

$$\frac{20}{100} \times 130$$

Ans :- 4% increase

18.

→ 100 → 125 → 100

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

Ans :- 25 %

19.

→ 100 → 140 → 98

$$\frac{30}{100} \times 140$$

Ans :- 2 % decrease

20.

→ 100 → 120 → 108

$$\frac{10}{100} \times 120$$

Ans :- 8 % increase

21.

→ 100 $\xrightarrow{25}$ 125 $\frac{25}{100} \times 100 = 25 \%$

25.

$$\begin{aligned} \rightarrow P &= SP - CP \\ P &= 650 - 500 \\ &= 150 \end{aligned}$$

$$\begin{aligned} P\% &= \frac{P}{CP} \times 100 \\ &= \frac{150}{500} \times 100 \\ &= 30\% \end{aligned}$$

$$P\% = 30\%$$

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

$$\rightarrow B + 20\% A = A$$

$$\begin{array}{ccccc} 100 & \longrightarrow & 120 & \longrightarrow & 100 \\ B & & A & & B \end{array}$$

$$\frac{20}{120} \times 100 = \frac{1}{6} \times 100 = 16.67\%$$

27. Boys to girl ratio in school is 3:2,
what % of total students are boys.

$$\rightarrow \frac{B}{G} = \frac{3}{2}$$

$$\frac{3}{3+2} = \frac{3}{5} \times 100 = 60\%$$

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

$$100 \xrightarrow{20\% \uparrow} 120\% \xrightarrow{\quad} 100$$

$$= \underline{\underline{16.67}}$$

33.

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

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

$$x = 300$$

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

$$= \underline{\underline{180}}$$

34.

75%

$$5000 \rightarrow 25\%$$

Total income

$$\frac{25}{5000} = \frac{75}{x}$$

$$\frac{1}{200} = \frac{75}{x}$$

$$x = 200 \times 75 = 15,000$$

35.

$$15000 + 5000 = 20,000$$

$$5000 \text{ is } 25\%$$

$$5000 \times 4 = \underline{\underline{20000}}$$

36. TV price increase by 20%. then 10% decrease
Overall % change?

$$\begin{aligned} \rightarrow 100 &\xrightarrow{20\% \uparrow} 120 \xrightarrow{10\% \downarrow} (120 - 12) = 108 \\ &\quad \underline{8\% \text{ increase.}} \end{aligned}$$

37.

$$\begin{aligned} \rightarrow 100 &\xrightarrow{25\% \uparrow} 125 \xrightarrow{20\% \downarrow} (125 - 25) = 100 \\ (\text{CP}) & \quad \quad \quad \underline{\underline{0\%}} \end{aligned}$$

38. C.p of article is Rs. 500 & it is sold
at a loss of 20%. what is s.p.

$$\begin{aligned} \rightarrow 500 &\xrightarrow{20\% \downarrow} 400 \\ (\text{C.P.}) & \end{aligned}$$

35.

$$\rightarrow 100 \xrightarrow{20\% \uparrow} 120 \longrightarrow 100$$

$$\begin{aligned} \frac{20}{120} \times 100 &= \frac{1}{6} \times 100 \\ &= 16.67 \end{aligned}$$

39.

$$\rightarrow 100 \xrightarrow{10\% \uparrow} 110 \xrightarrow{10\% \downarrow} 99$$

Ans :- 1% decreases.

40. Students needs 40% marks to pass. He gets 200 marks & failed by 20 marks. what is total marks.

$$\rightarrow 200 + 20 = 220 \longleftrightarrow 40\%$$

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

$$\frac{11}{2} = \frac{x}{100}$$

$$\frac{1100}{2} = x \quad x = 550$$

41.

$$\rightarrow 20\% + 30\% + 10\% = 60\%$$

$$40\% \rightarrow 18000$$

$$\frac{18000}{40} = \frac{x}{100}; \frac{900}{2} = \frac{x}{100} \quad \frac{90000}{2} = x$$

$$\underline{x = 45,000.}$$

42.

$$\rightarrow 100 \xrightarrow{30\% \uparrow} 130 \xrightarrow{30\% \downarrow} 91$$

Ans :- 9% decrease

43.

$$\rightarrow 10000 \xrightarrow{10\% \uparrow} 11000 \xrightarrow{10\% \downarrow} 12100 \xrightarrow{10\% \uparrow} 13310$$

44.

$$\rightarrow \frac{15}{100} \times A = \frac{20}{100} \times B$$

$$\frac{A}{B} = \frac{20}{100} \times \frac{100}{15}$$

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

$$A : B = 4 : 3$$

45. If cp is 800 & profit is 25 %.

$$\rightarrow cp = 800, \quad p = 25\%, \quad sp = ?$$

$$800 \xrightarrow{25\% \uparrow} (800 + 200) \rightarrow 1000$$

46. If cp of an item is Rs. 200 & the s.p is ₹ 250 profit %?

$$\rightarrow \begin{array}{ccc} cp & \rightarrow & sp \\ 200 & & 250 \end{array}$$

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

$$\underline{\underline{25\%}}$$

48. Article sells for Rs. 720 at profit of 20%. Find cp.

$$\rightarrow x \xrightarrow{20\% \uparrow} 720$$

$$\frac{1}{6} \times 720 = 120$$

$$720 - 120$$

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

$$cp = \underline{\underline{600}}$$

$$\frac{20}{120} \times 100 = \frac{1}{6} \times 100 = \frac{100}{6} = \underline{\underline{16.67\%}} \quad \text{or } 600$$

48. Sells items at loss of 18%. If the Cp is Rs. 500. Find S.p.

$$\rightarrow 500 \xrightarrow{18\% \downarrow} \left(\begin{matrix} 10\% + 8\% \\ 50 + 25 \end{matrix} \right) \longrightarrow 500 - 75$$

$$= 425$$

49. Cycle purchased for Rs. 1500 & sold at 10% loss. Sp = ?

$$\rightarrow 1500 \xrightarrow{10\% \downarrow} \underline{\underline{1350}}$$