

Examples

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Ex if the diff betw 75% of a number and $\frac{4}{5}$ of that number is 40. what is that no?

$$\frac{4}{5} \times 100 = 80\% \quad 75\%$$

$$(80\% - 75\%) = 5\% = 40$$

$$1\% = 8$$

$$100\% = 800.$$

Ex diff. b/w 55% and 35% of a no. is 400. find out the no?

$$\text{Ans} : 2000$$

Ex if the income of Ram is 20% more than Shyam's income how much % Shyam's income is less than Ram income?

Shyam's income is less than Ram's income}

$$\begin{aligned}\text{less \%} &= \frac{2}{100+2} \times 100 = \frac{20}{100+20} \times 100 \\ &= \frac{20}{120} \times 100 = \frac{200}{12} \\ &= 16\frac{2}{3} \%\end{aligned}$$

Ex A man spends 30% on food, 35% on house rent, 9% on tax and 17% on education. He saves 7200 Rs. Find out spent on travel?

Let total income is x .

Total expenditure

$$= x \times (30\% + 35\% + 9\% + 17\%)$$

$$= x \times 91\%$$

$$\text{Total saving} = x - x \times 91\%$$

$$= 9\%$$

$$Ex \text{ g.v.} = \frac{20000 \times 9}{100}$$

$$x = \frac{7200}{9} \times 100 = 80,000 \\ = 7200 \%$$

Total Exp \rightarrow 300 \rightarrow 100

\nwarrow 35%

- 9%

12%

91%

$$100\% - 91\% = 9\% = \boxed{g.v. = 7200}$$

Ex When numerator of a fraction is increased by 60% and denominator increases by 80%. The resultant fraction becomes $\frac{14}{27}$. Find the original fraction?

\rightarrow Let the original fraction $\frac{x}{y}$ then

$$x + \frac{x \times 10}{100} = y + \frac{y \times 80}{100}$$

$\frac{14}{27} \rightarrow$

$$\frac{16 \times x}{100} - \frac{14 \times y}{100} = \frac{14}{27}$$

$$\Rightarrow \frac{x}{y} = \frac{14}{27} \times \frac{18}{14}$$

$$= \frac{18}{27} = \frac{2}{3} //$$

Sx in an examination passing at 20% of max marks and failed by 10 marks.

Shyam got 240 marks and failed by 10%.

What is the max. marks?

Let max. marks is x.

$$x \times \frac{20}{100} + 40 = 240 + \frac{x \times 10}{100}$$

$$\frac{20x - 100}{100} = 240 - 100 = 200$$

$$\Rightarrow 10x = 20000$$

$$\Rightarrow x = 2000,$$

\therefore A reduction of 5% in the price of tea would enable to obtain 5 kg more tea for Rs. 2000. Find the reduced rate of tea.

$$\rightarrow \text{5% of } 2000 = \text{Rs. } 100$$

∴ Rs. 100 is rate of 5 kg.

1 kg. of tea = Rs. 20 / kg.

\therefore A number is wrongly divided by 5, instead of multiplying by 5, find the error in result

\rightarrow Let fake number = 20

$$\text{Actual Area} = 20 \times 5 = 100$$

$$100 - 4 = 96.$$

$$\text{New Answer} = \frac{20}{5} = 4$$

: Ans = $\frac{96}{100} \times 100$

$$= 96\%$$

Ex 26 If the radius of circle increased by 20%, then what is the % change in area?

$$\begin{aligned}\rightarrow \% \text{ change} &= +2 + 2 + \frac{2 \times 2}{100} \\ &= +20 + 20 + \frac{20 \times 20}{100} \\ &= 40 + 4 = 44,\end{aligned}$$

Ex 27 In the class of 40 students and 2 teachers each student got tea that was 10% of the total number of students and each teacher got tea that was 15% of the total no. of students. How many teacups were there?

$$\rightarrow \text{Each student got} = 10\% \text{ of } 40 = 4$$

$$\text{each Teacher got} = 15\% \text{ of } 40 = 6$$

$$\text{each tender } 94 = 15 \text{% of } 60 = 6$$

$$\text{Total toffees} = 4 \times 60 = 160 \quad \& \quad 6 \times 2 = 12$$

$$= 160 + 12 = 172,$$

\therefore A 120 ltrs soluⁿ of milk and water contains 20% water, what quantity of water must be added with that solution to get 25% water.

→ Quantity of water soluⁿ

$$= 20\% \text{ of } 120 \Rightarrow 24 \text{ ltrs of water}$$

$$\text{Quantity of milk} = 120 - 24 = 96 \text{ ltrs.}$$

$$75\% = 96 \text{ ltrs.}$$

$$1\% = 96/75$$

$$100\% = \frac{96}{75} \times 100 = 128 \text{ ltrs.,}$$

$$\text{so, water should be added} = 128 - 120 = 8 \text{ ltrs.}$$

\therefore Total salaries of A and B is Rs. 1500, A spends

S2 Total salaries of A and B is Rs. 1500, A spends 90% while B spends 80% of his salary. If the ratio of their savings are 3:4. Then what are the salary of A & B?

$$\rightarrow \text{Let A's salary} = 100A$$

$$\text{B's salary} = 100B$$

$$\text{Savings: } \frac{10A}{20B} = \frac{3}{4} \times \frac{\frac{10}{10}}{\frac{20}{20}}$$

$$\boxed{\frac{A}{B} = \frac{3}{2}}$$

$$A's \text{ income} = \frac{3}{5} \times 1500 = \text{Rs. } 900, \quad //$$

$$B's \text{ income} = \frac{2}{5} \times 1500 = \text{Rs. } 600, \quad //$$

S3 In an examination max marks were 500. A got 10% less than B and B got 25% more than C.

and < got 20% less than D. If A got 360 marks then how much percent got D in the exam?

$$\rightarrow A = 360$$

$$B = \frac{360 \times 100}{90} = 400$$

$$C = \frac{400 \times 100}{125} = 320$$

$$D = \frac{320 \times 100}{80} = 400,$$

$$500 \rightarrow 400$$

$$100 \rightarrow ? \quad D \% = \frac{400 \times 100}{500} = 80\% //$$

S2 In an election betw two candidates, one got 52% of the total valid votes. 25% of the total votes were invalid. The total number of votes were 8100. How many valid votes did the other person get?

$$= 8400 \times \frac{75}{100} = 6300,$$

No. of valid votes got by other person

$$= 68\% \text{ of } 6300$$

$$= \frac{6300 \times 68}{100} = 3024,$$

Ex A sum of Rs. 2236 is divided among A, B & C such that A receives 25% more than C and C receives 25% less than B. What is A's share in amount?

→ B receives Rs. x

$$C \text{ receives } 75\% \text{ of } x = \frac{75}{100} x = \frac{3x}{4},$$

$$A \text{ receives } = 125\% \text{ of } \frac{3x}{4}$$

$$= \frac{125}{100} \times \frac{3x}{4} = \frac{15x}{8}.$$

$$= \frac{125}{100} \times \frac{3x}{4} = \frac{15x}{16} //$$

$$\frac{15x}{16} + \frac{3x}{4} + x = 2236$$

$$\Rightarrow \frac{15x + 12x + 16x}{16} = 2236$$

$$\Rightarrow 43x = \underline{\underline{2236 \times 16}} \Rightarrow x = \frac{2236 \times 16}{43} = 832,,$$

$$R^1's \text{ amount} = \frac{15 \times 832}{16} = R\$780.$$