

Percentage

Few solved problems on Percentage

1. A batsman scored 110 runs which included 3 boundaries and 8 sixes. What percent of his total score did he make by running between the wickets?

Solution : Given , Total runs = 110

$$\text{Runs made by boundaries} = 3 \times 4 = 12$$

$$\text{Runs made by sixes} = 8 \times 6 = 48$$

Total runs made by boundaries and sixes = 60 runs

$$\therefore \text{Runs made by running between the wickets} = 110 - 60 = 50 \text{ runs}$$

So, we have, out of 110 runs 50 runs made by running between the wicket

$$\therefore \text{Required percentage} = \left[\frac{50}{110} \times 100 \right] \% = 45\frac{5}{11}\%$$

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2. Two students appeared at an examination. One of them secured 9 marks more than the other and his marks was 56% of the sum of their marks. Calculate the marks obtained by them .

Solution :

Let , Marks of one student = x

$$\therefore \text{Marks of other student} = x + 9$$

$$\text{Their total marks} = (x + x + 9) = 2x + 9$$

$$56\% \text{ of the total marks} = \frac{56}{100}(2x + 9)$$

$$\therefore \text{according to the question} \quad x + 9 = \frac{56}{100}(2x + 9)$$

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3. A fruit seller had some apples. After selling 40% of the apples, 420 apples remain with him. Find the apples originally he had.

Solution : Suppose the seller originally have x apples.

He sells = 40% of x

Remaining apples = 60% of x

According to question ,

$$60\% \text{ of } x = 420$$

$$\Rightarrow \frac{60}{100} \times x = 420$$

$$\Rightarrow x = 420 \times \frac{100}{60} = 700$$

Originally the seller had 700 apples.

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4. In a certain school, 20% of students are below 8 years of age. The number of students above 8 years of age is $\frac{2}{3}$ of the number of students of 8 years of age which is 48. What is the total number of students in the school?

Solution:

Suppose ,

$$\text{Total Number of students} = x$$

$$\text{Number of students below 8 years} = 20\% \text{ of } x$$

$$\therefore \text{Number of students having age 8 years and above} = 80\% \text{ of } x$$

$$\text{Number of students having 8 years of age} = 48$$

$$\text{Number of students above 8 years of age} = \frac{2}{3} \text{ of } 48$$

According to question ,

$$80\% \text{ of } x = 48 + \frac{2}{3} \text{ of } 48$$

$$\frac{80}{100} \times x = 48 + \frac{2}{3} \times 48$$

$$= 48 + 32$$

$$= 80$$

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

Therefore , total students = 100

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5. In an election between two candidates, winner candidate got 55% of the total valid votes where 20% of the votes were invalid. If the total number of votes was 7500, what is the number of valid votes that the loser candidate got ?

Solution :

$$\text{Total number of vote cast} = 7500$$

$$\text{Invalid vote} = 20\% \text{ of } 7500 = \frac{20}{100} \times 7500 = 1500$$

$$\text{Total Valid Votes} = 7500 - 1500 = 6000$$

Winner candidate get 55% of valid votes

$$\therefore \text{loser get } 45\% \text{ of valid votes} = \frac{45}{100} \times 6000$$

$$= 2700$$

So, loser Candidate get 2700 votes.

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7. Gauri went to the stationers and bought things worth Rs. 25, out of which 30 paise went on sales tax on taxable purchases. If the tax rate was 6%, then what was the cost of the tax free items?

Solution : Suppose

The amount of taxable purchase = x

$$\text{Tax paid} = 30 \text{ paise} = \frac{30}{100} \text{ rupees}$$

Tax rate = 6%

$$\therefore 6\% \text{ of } x = \frac{30}{100}$$

$$\Rightarrow \frac{6}{100} \times x = \frac{30}{100}$$

$$\Rightarrow x = \frac{30}{100} \times \frac{100}{6} = 5$$

\therefore the amount paid with tax = 5.30

Cost of tax free items = 25 - 5.30 = 19.70

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8. Rajeev buys good worth Rs. 6650. He gets a rebate of 6% on it. After getting the rebate, he pays sales tax @ 10%. Find the amount he will have to pay for the goods.

Solution : Price of the goods = 6650

$$\text{Rebate} = 6\% \text{ of } 6650 = \frac{6}{100} \times 6650 = 399$$

Price after rebate = 6650 - 399 = 6251

$$\text{Sales tax} = 10\% \text{ of } 6251 = \frac{10}{100} \times 6251 = 625.1$$

Final price of the goods = 6251 + 625.1 = Rs 6876.1

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9. If 20% of $a = b$, then find $b\%$ of 20 .

Solution: Given

20% of $a = b$

$$\Rightarrow \frac{20}{100} \times a = b$$

$$\text{Now } b\% \text{ of } 20 = \frac{b}{100} \times 20 = \frac{20}{100} \times b = \frac{20}{100} \times \left(\frac{20}{100} \times a \right) = \frac{4}{100} a = 4\% \text{ of } a$$

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