

ATOMIC ENERGY EDUCATION
SOCIETY, MUMBAI

CLASS 8 SUBJECT MATHEMATICS

MODULE - 1/3(PPT)

CHAPTER 8 :-COMPAIRING QUANTITIES

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Comparing Quantities

Ratio

Need two quantities
Like as compare of no of shoes to no of slipper in your home.

So here ratio will be
$$= \frac{\text{no of shoes}}{\text{no of slipper}}$$

Note:- here unit remain same

Percentage

Need two quantities
Like your total marks and your obtained marks

So here percentage will be
$$= \frac{\text{obtained marks}}{\text{total marks}} \times 100 \%$$

Note :- here 100 multiplier is compulsory

Or we can consider

$$\% = \frac{1}{100}$$

EXAMPLES OF RATIO

1. You have geometry box. It contains 20 pen and 7 pencil. Find the ratio pen to pencil

Solution:- According to previous fig

$$\text{Ratio} = \frac{\text{no of pen}}{\text{no of pencill}} = \frac{20}{7} = 20:7$$

This is required ratio we read this ratio 20:7 like as , “ 20 is to 7”.

2. 5 metre to 1 km

Solution:- this is an example to explain the concept “Unit remain same “

so we change unit first

$$1 \text{ km} = 1000 \text{ met}$$

So,

$$\text{Ratio} = \frac{5 \text{ met}}{1 \text{ km}} = \frac{\{5 \text{ met}\}}{\{1000 \text{ met}\}} = \frac{5}{1000} = \frac{1}{200} = 1:200$$

EXAMPLES OF PERCENTAGE

Here there are 2 quantities one is base quantity and another is percentile quantity
For example in the above example total marks is base quantity and obtained marks is percentile quantity.

Note :- We know that $\% = \frac{1}{100}$ so when we put sign of % we have to multiplied by 100.

1. If you got 240 marks out of 500. find the percentage.

solution :- Here base quantity is 500 and percentile quantity 240

So,

$$\text{Percentage} = \left(\frac{240}{500} \times 100\right)\% = \frac{240}{5}\% = 48\%.$$

Difference

Difference means subtraction from bigger quantity to lesser quantity. It has two cases either increase or decrease.

e.g

1. If you have 5 toffee but you gave 2 toffee to your friend. Then how many toffee you have?
2. If you have ₹ 50 but your father gave you some rupees so that now you have ₹ 70 . Then how many rupees your father gave?

Increase/Decrease

Question 1 is an example of decrease

so ,

$$\text{decrease} = 5 - 2 = 3$$

Question 2 is an example of increase

so ,

$$\begin{aligned}\text{increase} &= 70 - 50 \\ &= ₹ 20\end{aligned}$$

Finding increase and decreasing percentage

In this topic we shall use two studied topics one is difference and another percentage.

In these kinds of questions first we find the difference then percentage. In percentage basic quantity is initial and percentile quantity is difference.

Question 1 is an example of decrease

so ,

$$\text{Increase(difference)} = 5 - 2 = 3$$

Here base quantity is 5 and percentile quantity is difference 3 so ,

$$\text{increase \%} = \frac{3}{5} \times 100 \% = \frac{300}{5} \% = 60\%.$$

Question 2 is an example of increase

so ,

$$\text{Increase (difference) } = 70 - 50 = 20$$

Here base quantity is 50 and percentile quantity is difference 20 so ,

$$\text{increase \%} = \frac{20}{50} \times 100 \% = \frac{2000}{50} \% = 40\%.$$

THANK
YOU