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(Affiliated to CBSE Up to +2 Level)

CLASS: VII **SUBJECT: MATHEMATICS** **DATE: 03-08-2021**

Comparing Quantities

Ratios: It shows the relation between two quantities or to compare two quantities.

Example: If there are 20 men and 40 women in a company then the ratio of the number of men to the number of women is 20: 40.

By using the fraction, it can be written as 20/40 = 1/2.

This shows that the number of men is half the number of women in the company.

It is written as **1: 2 and read as "1 is to 2"**.

$\frac{a}{b}$	a : b	a to b
$\frac{4}{5}$	x : 7	3 to 5

Percentage: This is another way to compare the quantities. It means for every hundred. In the fraction form if the denominator is 100 then the numerator is the percentage and is represented by a special **symbol %**, read as a percent.

There are two methods to find the percentage.

1. By Fraction Method

Example: If there are 20 boys out of 50 students in the class then find the percentage of boys.

To make the denominator hundred we need to multiply both the denominator and numerator with 2.

$$\frac{20}{50} \times \frac{2}{2} = \frac{40}{100} = 40\%$$

So the percentage of boys is 40%.

2. Unitary Method: In the unitary method, first, we need to find the value of one unit then multiply it with the required number of units.

Example: In the above example, there are 20 boys out of 50 students. Then out of 100 students, the number of boys will be

$$\frac{20}{50} \times 100 = 40\%$$

Finding the Increase or Decrease Percent

To find the increase or decrease in percent there are two methods.

1. Calculate the percentage of the given value then add or subtract it to the original value.

Example: If the price of the refrigerator was 50000 Rs. last year and it increases by 20 % this year. Then what is its price now?

Solution: First, we will calculate the 20% of 50000 Rs.

$$50000 \times \frac{20}{100} = 10000$$

Current Value = Original Value + Increased Price

= 50000 + 10000

= 60000 Rs.

The current value of the refrigerator is 60000 Rs.

2. Unitary Method: As we know that 20% increase means 100 Rs. will increase to 120 Rs.

So 50000 will increase to

$$50000 \times \frac{120}{100} = 60000$$

Hence the increased value of the refrigerator has come directly.