

St. Andrews Scots School

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Class: VII	Subject: Mathematics	Topic: Comparing quantities	Notes
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In our daily life, there are many occasions when we compare two quantities. Eg: Speed of car : Speed of man = 10 : 1

Here, the speed of a car is ten times the speed of a man.

Ratio:

A comparison by division is called ratio.

Eg: Ram scored 40 marks out of 50, whereas Shyam scored 35 marks out of 50. So, the ratio of Ram : Shyam will be 40:35 or 8:7.

Proportion:

An equality of two ratios is called a proportion.

Eg: $3/5 = 12/20$

Continued Proportion:

When the second and the third term of a proportion are the same number, we call it a continued proportion.

Eg: 2:6::6:18

Unitary Method:

The method of finding the value of one unit from the value of the given number of items and then using it to find the value of required number of items.

Eg: Cost of 5 pens = ₹10

Cost of 1 pen = ₹10 ÷ 5 = ₹2

Cost of 15 pens = ₹2 × 15 = ₹30

Percentage:

The term 'Percent' means per hundred or out of hundred.

Eg: Pinky got 120 marks out of 200.

Pinky's % = $(120/200) \times 100 = 60\%$

Increase or Decrease Percent:

We can calculate the increase or decrease in percent (%) as follows:

- (i) Increase % = (Increased value / Original value) \times 100
- (ii) Decrease % = (Decreased value / Original value) \times 100

Profit and Loss:

In our day-to-day life, we use very frequently these words 'Profit and Loss'.

Profit:

If the selling price of an article is more than its cost price, then the shopkeeper earns profit.

Profit = Selling Price - Cost Price

Loss:

If the selling price of an article is less than its cost price, then the shopkeeper suffers a loss.

Loss = Cost Price - Selling Price

Formulae to find Selling Price and Cost Price:

- If there is a gain %, $SP = CP \times (100 + \text{Gain}\%) / 100$
- If there is a loss %, $SP = CP \times (100 - \text{Loss}\%) / 100$
- If there is a gain %, $CP = SP \times 100 / (100 + \text{Gain}\%)$
- If there is a loss %, $CP = SP \times 100 / (100 - \text{Loss}\%)$

Simple Interest:

Borrowing or lending of money is done by the banks or a money lender with some interest known as simple interest for a specified period of time.

There are some terms related to simple interest.

- (i) Principal: The money borrowed, or the sum denoted by 'P'.
- (ii) Simple Interest: The additional amount paid by the borrower to the lender. It is denoted by 'SI'.
- (iii) Amount: The total money paid by the borrower. $A = P + SI$
- (iv) Time: The period for which the money is borrowed. It is denoted by 'T'.
- (v) Rate: The interest on ₹100 for 1 year. It is denoted by 'R'.

Formula: $SI = (P \times R \times T) / 100$