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## **Proportion:-**

When two ratios are equal,then the four quantities composing them are said to be proportionals.

This if  $a/b = c/d$ ,then a,b,c,d are proportionals.

This is expressed by saying that a is to b as c is to d and the proportion is written---

$$a:b :: c:d$$

or  $a:b = c:d$

For example-

$$2 : 4 :: 60 : 120$$

We say that 2, 4, 60 and 120 are in

Proportion.

Again,

$$2 : 5 \neq 60 : 15$$

We say that 2, 5, 60 and 15 are not in proportion.

So, if two ratios are not equal, then we say that they are not in proportion.

Four quantities are said to be in proportion if the ratio of the first and the second quantities is equal to the ratio of the third and the fourth quantities. Thus, four quantities 3, 10, 15, 50 are in proportion, since ----

$$3/10 = 15/50.$$

We write ----

3 : 10 :: 15 : 50 and this is read as 3 is to 10 as 15 is to 50.

Here, the first and the fourth terms, i.e., 3 and 50 are called the extremes while the second and the third terms, i.e., 10 and 15 are called the means.

The order of terms in a proportion is important, 3, 10, 15, 50 are in proportion but 3, 10, 50, 15 are not in proportion, since ----

3/10 is not equal to 50/15 .

