

PROPORTION

PROPORTION : When four quantities are such that the ratio of first to the second is same as the ratio of third to fourth, the quantities are said to be in proportion.

Ratios $14 : 30 = \frac{14}{30} = \frac{7}{15}$ and $63 : 135 = \frac{63}{135} = \frac{7}{15}$ are same,

$14, 30, 63, 135$ are in proportion = $14 : 30 :: 63 : 135$

- The first and fourth terms are called as **extremes**
- The second and third terms are called as **means**
- **Product of extremes = Product of means**
- **The double colon (::) is used in place of sign of equality (=)**
- Fourth quantity is called **fourth proportion**.

Continued proportion:

- Three quantities are said to be in continued proportion, if the ratio of the first to the second is same as ratio of second and third i.e. **$a : b = b : c$**
- Second term is called **mean proportion**. i. e. **$a : b = b : c$** ;
 c, b is the mean proportional between a and c .
- Third quantity is called **third proportion to first and second term**.
i.e. **$a : b = b : c$** ; **c is the third proportional between a and b .**

Proportion $a : b : c$ indicates three ratios, namely $a : b$; $b : c$ and $a : c$