

Board- CBSE	Std- 6	Topic- Ratio and Proportion	Revision Notes
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Properties of Proportion

In general, four numbers are said to be in proportion, if the ratio of the first two quantities is equal to the ratio of the last two. In general, the symbol for representing a proportion is “::”

(i) The numbers a, b, c, and d are proportional if the ratio of the first two quantities is equal to the ratio of the last two quantities, i.e., $a : b :: c : d$ and is read as ‘a is to b is as c is to d’. The symbol ‘: :’ stands for ‘is as’.

(ii) Each quantity in a proportion is called a term or it’s proportional.

(iii) In a proportion, the first and the last terms are called the extremes; whereas the second and the third terms are called the means.

If four numbers a, b, c, and d are proportional (i.e., $a : b :: c : d$), then a and d are known as extreme terms and b and c are called middle terms.

(v) The fourth term of a proportion is called fourth proportional.

(vi) For every proportion, the product of the extremes is always equal to the product of the means, i.e., $a : b :: c : d$ if and only if $ad = bc$.

For example; in proportion $3 : 4 :: 9 : 12$;

Product of extremes = $3 \times 12 = 36$ and product of means = $4 \times 9 = 36$

(vii) From the terms of a given proportion, we can make three more proportions.

(viii) If $x : y = y : z$, then x, y, z are said to be a continued proportion.

(ix) If x, y, z are in continued proportion, (i.e., $x : y :: y : z$), then y is the mean proportional between x and z.

(x) If x, y, z are in continued proportion, (i.e., $x : y :: y : z$), then the third quantity is known as the third proportional to the first and second i.e., z is the third proportional to x and y.