

Geometric Progression (GP):

Key Points related to GP number sequence:

- If we consider the ratio of successive terms of the G.P. then we have

$$\frac{t_2}{t_1} = \frac{ar}{a} = r, \frac{t_3}{t_2} = \frac{ar^2}{ar} = r, \frac{t_4}{t_3} = \frac{ar^3}{ar^2} = r, \frac{t_5}{t_4} = \frac{ar^4}{ar^3} = r$$

Thus, the ratio between any two consecutive terms of the Geometric Progression is always constant and that constant is the common ratio of the given Progression.

- When the product of three consecutive terms of a G.P. are given, we can take the three terms as $\frac{a}{r}, a, ar$.
- When the products of four consecutive terms are given for a G.P. then we can take the four terms $\frac{a}{r^3}, \frac{a}{r}, ar, ar^3$.
- When each term of a Geometric Progression is multiplied or divided by a non-zero constant then the resulting sequence is also a Geometric Progression.
- The sum of first n natural numbers are also called Triangular Numbers because they form triangle shapes
- The sum of squares of first n natural numbers is also called Square Pyramidal Numbers because they form pyramid shapes with square base.