

CHAPTER 06

Progressions

Finite and Infinite G.P:

- If the number of terms in G.P is finite, then it is called a finite G.P.

Example:

2, 8, 32, 128 is a finite G.P as it has 4 terms with common ratio '4'.

- If the number of terms in G.P is infinite, then it is called infinite G.P.

Example:

30, 90, 270, 810...is infinite G.P as it has infinite number of terms with common ratio '3'.

Note:

In a finite G.P, the product of the terms equidistant from the beginning and from the end is always same and is equal to the product of the first and the last terms.

$$\text{i.e. } a_k \cdot a_{n-k+1} = ar^{k-1} \cdot ar^{n-k} = a^2 r^{n-1} = a \cdot a_n \quad \forall \quad k = 2, 3 \dots n-1.$$