## Arithmetic sequence

An arithmetic sequence (also known as an arithmetic progression) is a sequence of numbers in which the difference between consecutive terms is always the same.

For example, in the arithmetic sequence $1,5,9,13,17, \ldots$, the difference is always 4 . This is called the common difference.

If the first term of the sequence is $a$ and the common difference is $d$, then the arithmetic sequence can be written as

$$
a, a+d, a+2 d, a+3 d, \ldots, a+(n-1) d, \ldots
$$

which has $n^{\text {th }}$ term $a+(n-1) d$.

