# Arithmetic and Geometric Sequences

A _____ is a list of numbers in a particular order. Ex: 3, 6, 9, 12, …

First term-$a_1$
Second term-$a_2$
And so on….

Many sequences have patterns. The two types of sequences we will be studying are arithmetic and geometric.

## Arithmetic Sequences

An arithmetic sequence is a sequence where each term is found by adding a constant to the previous term. This constant is called the **common difference (d).**

For example, take the arithmetic sequence 2, 4, 6, 8,….
Each term is found by adding ____to the term before it.

1. Find the common difference of the following sequence: 3, 6, 9, 12, …

2. Find the common difference of the following sequence: 55, 49, 43,…

## Geometric Sequences

-A geometric sequence is a sequence where each term is found by multiplying the previous term by a constant called the common ratio (r).

The common ratio can be found by dividing any term by its previous term.

3. Find the common ratio of the following sequence 8, 20, 50, 125, …

4. Find the common ratio of 1.25, -1.5, 1.8,…

5. Find the common ratio of 405, 135, 45, …