

# Sequences

**Sequence:** a function whose domain is the finite set  $\{1, 2, 3, \dots, n\}$  or the infinite set  $\{1, 2, 3, \dots\}$

**Finite Sequence:** a sequence having a finite number of terms

**Infinite Sequence:** a sequence that has an infinite number of terms

## Rules for Sequences

**Linear Sequence:** a sequence with constant first differences ( $d_1$ )

- $a_n = an + b$
- $b = a_0$
- $a = d_1$

**Quadratic Sequence:** a sequence with constant second differences ( $d_2$ )

- $a_n = an^2 + bn + c$
- $a + b = d_1$
- $2a = d_2$
- $c = a_0$