

## Sequences

A sequence is a list of numbers arranged according to a rule.

For example

(a)  $0, 2, 4, 6, 8, 10, 12, \dots$

each number is generated by adding two to the previous number

(b)  $1, 2, 4, 8, 16, 32, 64, \dots$

each number is generated by multiplying the previous number by three

(c)  $1, \frac{1}{2}, \frac{1}{3}, \frac{1}{4}, \frac{1}{5}, \dots$

the reciprocals of  $1, 2, 3, 4, 5, \dots$

(d)  $1, 4, 9, 16, 25, 36, \dots$

the squares of  $1, 2, 3, 4, 5, 6$ .

(e)  $2, 3, 5, 7, 11, 13, \dots$

the sequence of prime<sup>1</sup> numbers

(f)  $1, 2, 6, 24, 120, 720, \dots$

the sequence of factorials,  $1!, 2!, 3!, 4!, 5!, 6!$

(g)  $1, 1, 2, 3, 5, 8, 13, 21, \dots$

Fibonacci sequence, each term after the first two is the sum of the previous two terms.

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<sup>1</sup> [Prime and Composite Numbers](#)