

Periodic sequence

A sequence is called *periodic* if it repeats itself over and over again at regular intervals.

Formally, a sequence u_1, u_2, \dots is periodic with period T (where $T > 0$) if $u_{n+T} = u_n$ for all $n \geq 1$. The smallest such T is called the *least period* (or often just “the period”) of the sequence.

For example, the following sequences are periodic:

0, 1, 0, 1, 0, 1, ...	least period 2
0, 1, 0, -1, 0, 1, 0, -1, ...	least period 4
1, 1, 1, 1, 1, ...	least period 1