

11.2. Arithmetic Sequences

E.g. $\{1, 4, 7, 10, 13, 16, 19, 22, 25, 28, 31, \dots\}$

$\underbrace{1 \quad 4 \quad 7 \quad 10 \quad 13 \quad 16 \quad 19 \quad 22 \quad 25 \quad 28 \quad 31 \quad \dots}_{+3 \quad +3 \quad +3 \quad +3 \quad +3 \quad +3 \quad +3 \quad +3 \quad +3 \quad +3 \quad +3}$

An arithmetic sequence is a sequence where the difference between a term and the previous term is a constant.

In other words, to get from one term to the next, we always add a constant. This constant is called

the common difference of the sequence

In general, an arithmetic sequence has the form

$$a_1, a_1 + d, a_1 + 2d, a_1 + 3d, a_1 + 4d, \dots$$

$$a_{100} = a_1 + 99d \quad \bullet \quad \boxed{a_n = a_1 + (n-1)d}$$

Nov 7-7:45 PM