

10-2A Arithmetic Sequences

sequence: a set of numbers in a specific order.

term: each number in a sequence.

- 1st term in a sequence is a_1 .
- 2nd term in a sequence is a_2 .
- the n^{th} term in a sequence is a_n .

definition of an arithmetic sequence: a sequence in which each term, after the 1st term, is found by adding a constant, called the **common difference**, to the previous term.

n^{th} term of an arithmetic sequence: the n^{th} term, a_n , of an arithmetic sequence with first term a_1 and common difference d is given by:

$$a_n = a_1 + (n - 1)d$$

arithmetic means: the terms between any two non-consecutive terms of an arithmetic sequence.

Examples

1. Find the next four terms in the arithmetic sequence 33, 39, 45, . . .

Find the n^{th} term of each arithmetic sequence.

2. $a_1 = -5, d = 4, n = 9$

3. $a_1 = 3, d = -4, n = 6$

4. Find the four arithmetic means between 19 and 54.

5. Find the missing terms of the sequence.

____, 17, _____, _____, _____, -7