

Sequence: ordered list of numbers; each number in a sequence is called a term.

Arithmetic Sequence: a sequence where each term after the 1st is found by adding a constant to the previous term.

Common Difference (d): the number added to get the next term. This can be any real # including fractions and negatives.

Explicit Formula: formula that defines a Sequence; used to determine the nth term.

Explicit Formula for an Arithmetic Sequence

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

↑ ↑ ↑
nth term first term Common difference

Example: If the first term of an arithmetic sequence is 7, and the common difference is 3, what is the 279th term?

a) Write the Explicit Formula to find the nth term of the sequence.

$$a_1 = 7 \quad n = 279 \rightarrow a_{279} = 7 + (279 - 1)(3)$$
$$d = 3 \quad \boxed{a_n = 7 + (n - 1)(3)} \quad \boxed{a_{279} = 841}$$

b) Use the Explicit Formula to find the 279th term.

