

10-2B Arithmetic Series

- *find sums of arithmetic sequences*
- *A.CED.4*

series: the sum of the terms of a sequence.

arithmetic series: the sum of the terms of an arithmetic sequence.

sum of an arithmetic series: the sum, S_n , of the first n terms of an arithmetic series is given by $S_n = \frac{n}{2}(a_1 + a_n)$.

Examples: *Find the sum of the following.*

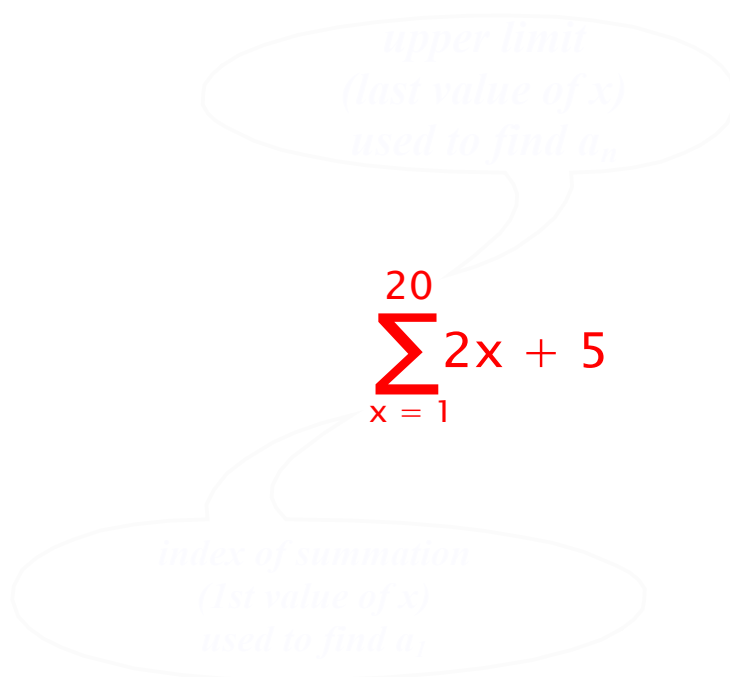
1. 1st 100 positive integers.

2. 1st 10 odd integers.

Examples: *Find the sum of the following.*

3. The first 50 terms of the arithmetic series where $a_1 = 5$ and $d = 25$.

sigma or summation notation: abbreviated form of writing a series.
Successively replace the index of summation until the upper limit.



Examples: Write each series in expanded form and find the sum.

4.
$$\sum_{n=1}^6 3n+7$$

5.
$$\sum_{k=1}^4 3k-6$$