

Chapter 4.2 Area

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Objectives

- Use sigma notation to write and evaluate a sum
- Understand the concept of area
- Approximate the area of a plane region
- Find the area of a plane region using limits

Definition 4.4 – Sigma Notation The sum of n terms $a_1, a_2, a_3, \dots, a_n$ is written as:

$$\sum_{i=1}^n a_i = a_1 + a_2 + a_3 + \dots + a_n$$

Where i is the **index of summation**, a_i is the **i th term** of the sum, and the **upper and lower bounds of summation** are n and 1 .

Remark

The upper and lower bounds must be constant with respect to the index of summation. However, the lower bound doesn't have to be 1 . Any integer less than or equal to the upper bound is legitimate.