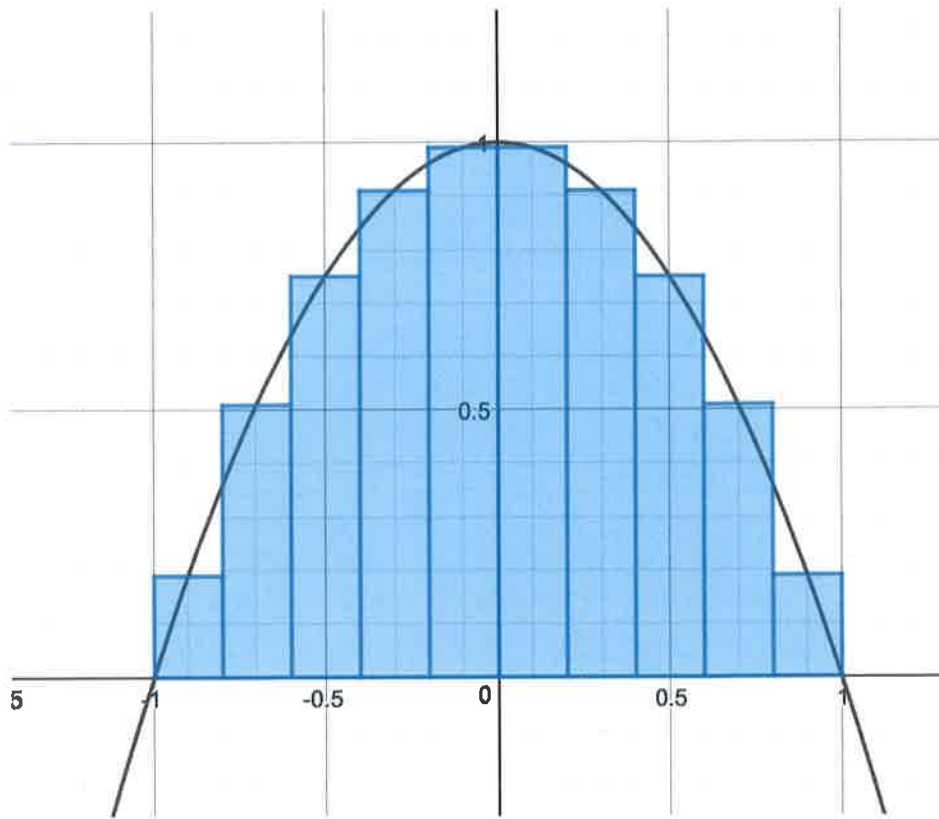**Algebra of Summations**

Integral
Calculus :

Use rectangles
to approximate
areas of regions.

Example 1:

Suppose

$$\sum_{i=1}^{n} a_i = 2 + 4 + 6 + ... + 64$$. Find a_i and n.

Greek letter sigma
index i
$a_i = i$-th term

$a_i = 2i$, $n = 32$

Example 2:

Write the following using sigma notation.

$$13 - \frac{13}{2} + \frac{13}{3} - \frac{13}{4} + ... + \frac{13}{46}$$

The signs are alternating.
what is the i-th term
that will represent the
pattern?

$$a_i = (-1)^{i+1} \frac{13}{i}$$

$$\sum_{i=1}^{46} (-1)^{i+1} \frac{13}{i}$$