

13.1
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### 13.1: Area under curves

Ex1: Estimate the area under  $y = \sqrt{x}$  on  $[1, 9]$   
w/ 4 rect. of equal width and...

- right endpoints
- left endpoints.

Ex2: ~~Est~~ Set-up the sum for finding the area under  $y = x$  w/  $N$  rectangles & left endpoints.

Question: What is  $1 + 2 + \dots + N$ ?  $\frac{N(N+1)}{2}$

Ex3: Find the area under  $y = x$  on  $[0, 1]$  w/ right endpoints.

Ex4: Summation ( $\Sigma$ ) notation.

Ex 3 rev. w/  $\Sigma$  notation.

Ex5: Use rectangles to find the area under  $y = x^3$  on  $[0, 1]$ .

- $\Sigma 1$
- $\Sigma x_i$
- $\Sigma (x_i + y_i)$
- $\Sigma i$
- $\Sigma i^2$
- $\Sigma i^3$