

Sigma Notation

While working in a group make sure you:

- Expect to make mistakes but be sure to reflect/learn from them!
- Are civil and are aware of your impact on others.
- Assume and engage with the strongest argument while assuming best intent.

(source: Stewart's Calculus, Early Transcendentals §5.1)

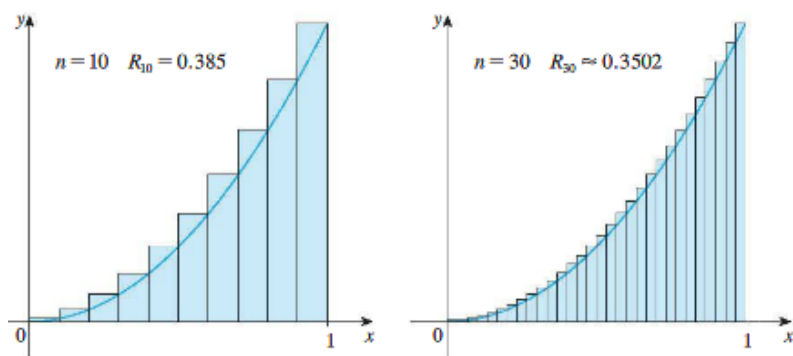


FIGURE 8 Right endpoints produce upper sums because $f(x) = x^2$ is increasing

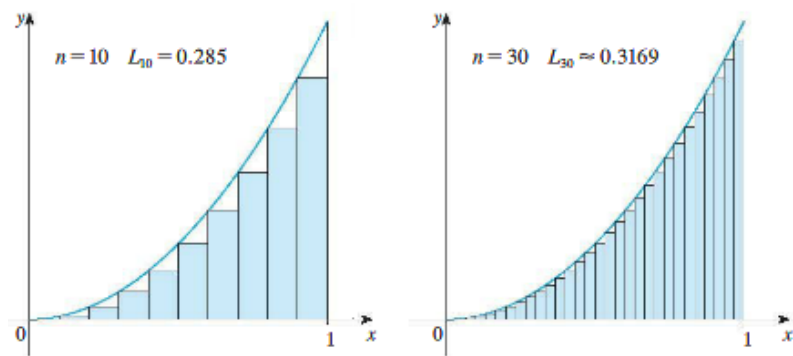


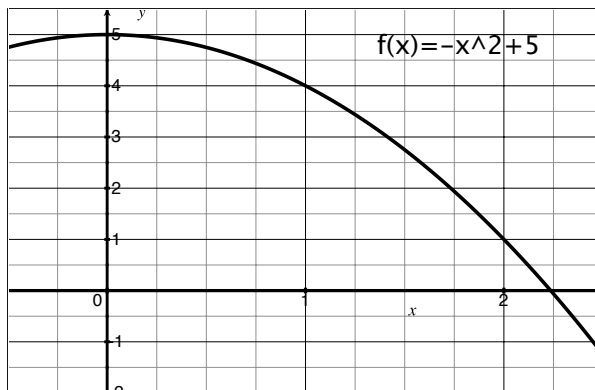
FIGURE 9 Left endpoints produce lower sums because $f(x) = x^2$ is increasing

1. Expand the left expression and use sigma notation for the right expression.

$$\sum_{i=0}^5 \frac{(-1)^i \cdot i}{2}$$

$$\frac{1}{5} + \frac{1}{10} + \frac{1}{15} + \dots + \frac{1}{500}$$

2. Find another approximation for $\int_0^2 -x^2 + 5 dx$ with 4 rectangles using right endpoints.



3. The odometer on our car is broken but we would like to estimate the distance driven over a 30 second-time interval. We take the speedometer readings every five seconds, convert them into ft/s, and record them in the following table:

Time (s)	0	5	10	15	20	25	30
Velocity (ft/s)	25	31	35	43	47	46	41