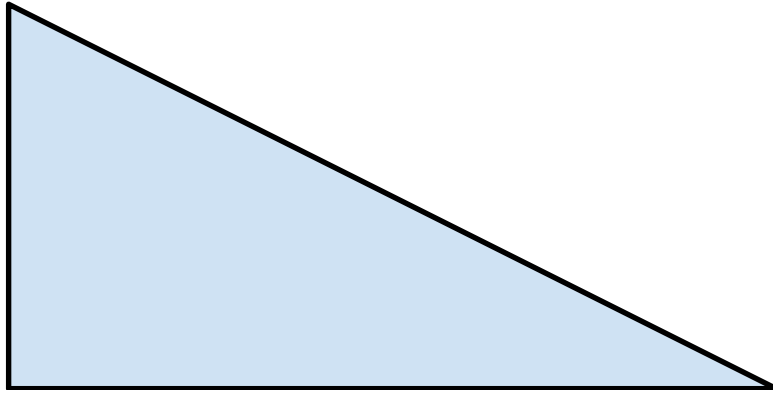


ACTIVITY ON RIEMANN SUMS

Everything in this worksheet is scaled by inches.

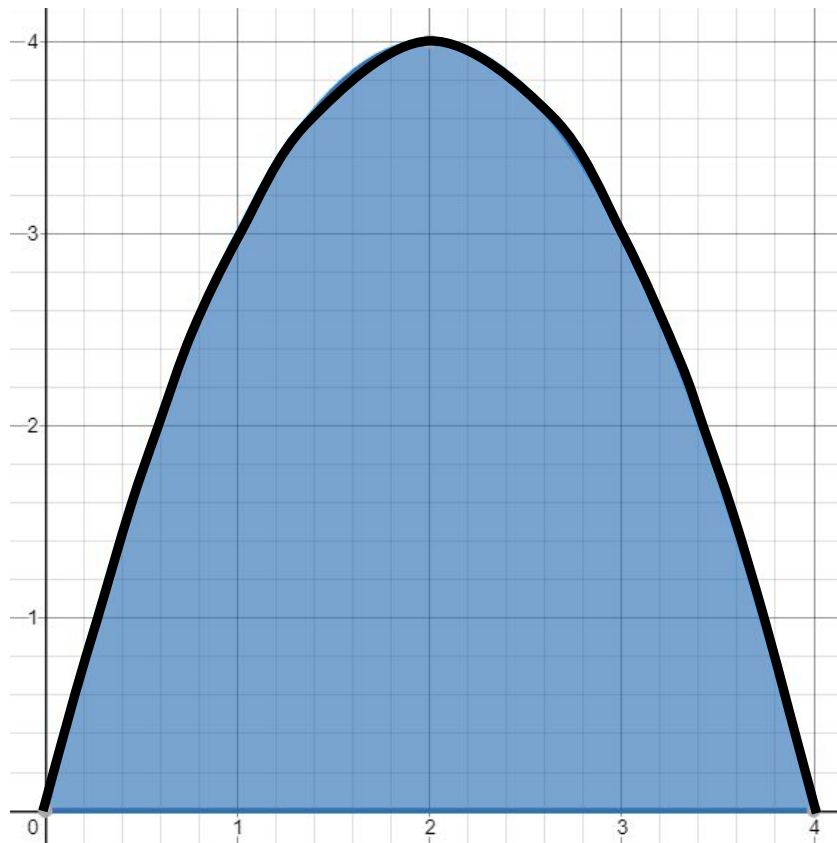
- (1) Let's approximate the area of the triangle below using rectangles.



- (a) Use a left-hand approximation and 1-inch strips to approximate the area.
- (b) Use a right-hand approximation and 1-inch strips to approximate the area.
- (c) Use a left-hand approximation and $1/4$ -inch strips to approximate the area.
- (d) Find the actual area of the triangle using the formula for the area of a triangle. How close were you?

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(2) Now, let's approximate the area between the parabola $y = 4x - x^2$ and the x -axis



(a) Use a left-hand approximation and 1-inch strips to approximate the area.

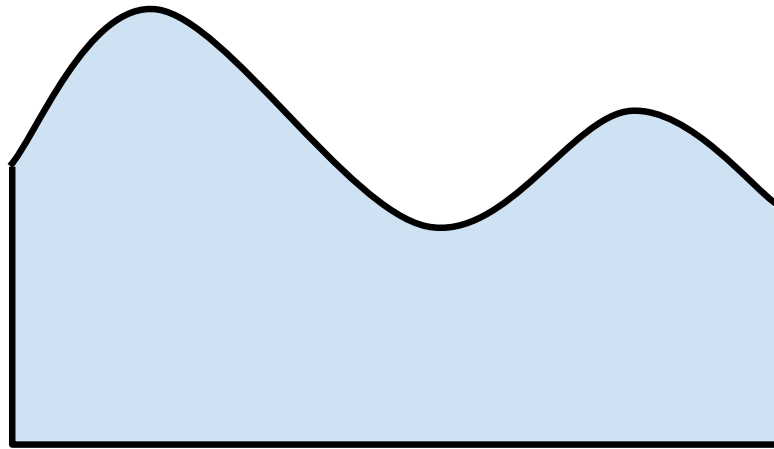
(b) Use a right-hand approximation and 1-inch strips to approximate the area.

(c) Use a left-hand approximation and 1/4-inch strips to approximate the area.

(d) Use a left-hand approximation and 1/3-inch strips to approximate the area. Oh no, I didn't give you 1/3-inch strips! Use what you know about the graph to find the height that each strip should have.

(e) The actual area is $\frac{32}{3}$ in². How close were you?

(3) Let's approximate the area for the shape below



- (a) Use a left-hand approximation and 1-inch strips to approximate the area.
- (b) Use a right-hand approximation and 1-inch strips to approximate the area.
- (c) Use a left-hand approximation and $1/4$ -inch strips to approximate the area.
- (d) Use a right-hand approximation and $1/4$ -inch strips to approximate the area.
- (e) Which approximation do you think is closest, and why?