

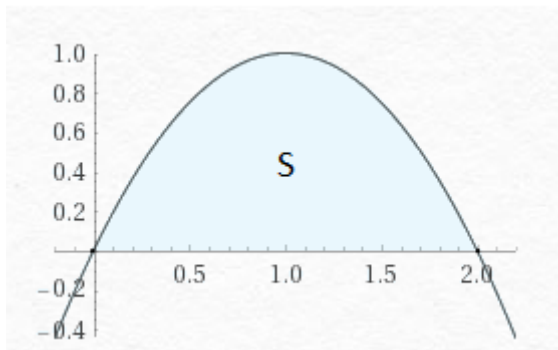
## Answer on Question #71325 – Math – Calculus

### Question

Sketch the region below the curve  $y = 2x - x^2$  and above the  $x$ -axis and find its area.

### Solution

Since the equality  $y = 2x - x^2 = -(x - 1)^2 + 1$  holds, we get



Obviously, we obtain

$$S = \int_0^2 (2x - x^2) dx = 2 \int_0^2 x dx - \int_0^2 x^2 dx = \frac{4}{3}.$$

**Answer:**  $\frac{4}{3}$ .