Answers

Use these to check the method as well as the final answer.

1. The antiderivative is x^3.

$$[x^3]_0^2 = 8$$

2. The curve is on or above the x-axis on this interval.

$$\left[\frac{x^3}{3}\right]_0^3 = 9$$

3. Here $2x$ is the upper curve.

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

4. The width is 1. The exact integral is 8/3, so this estimate is an overestimate.

$$T = \frac{1}{2}(0 + 2 \times 1 + 4) = 3$$