

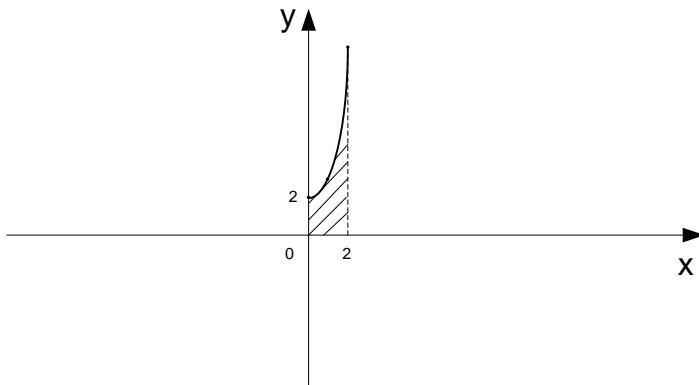
## Answer on Question #76409 – Math – Calculus

### Question

Find the volume of the solid of revolution obtained by revolving the area under the curve  $y = 2 + x^3$  between  $x = 0$  and  $x = 2$  about the x-axis. Draw a rough sketch.

### Solution

On the section from 0 to 2, the function is continuous, hence a certain integral exists



$$\text{Volume: } V = \pi \cdot \int_0^2 (x^3 + 2)^2 dx = \pi \cdot \int_0^2 x^6 + 4x^3 + 4 = 3.14 \cdot \left( \frac{32}{6} + \frac{32}{6} + 8 \right) = 3.14 \cdot (10.66 + 8) = 58.59$$

**Answer:**  $V = 58.59$ .