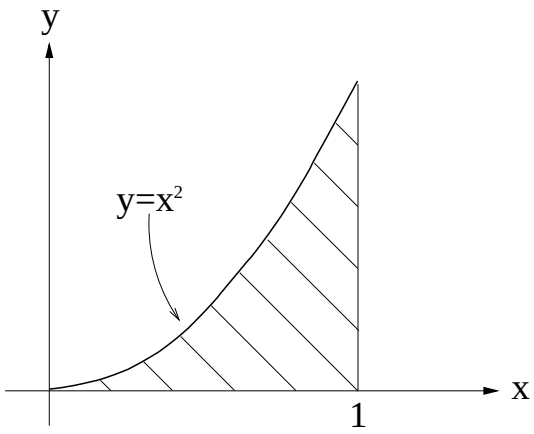
Question

Sketch the region enclosed by the given curves and find the volume of the solid generated when it is revolved about the x-axis:

$y = x^2$, $x = 1$, $y = 0$.

Answer



Use the disc method:

$$\int_{x=0}^{x=1} \pi(x^2)^2\,dx = \pi \int_{x=0}^{x=1} x^4\,dx = \pi \left[\frac{x^5}{5}\right]_0^1 = \frac{\pi}{5}$$