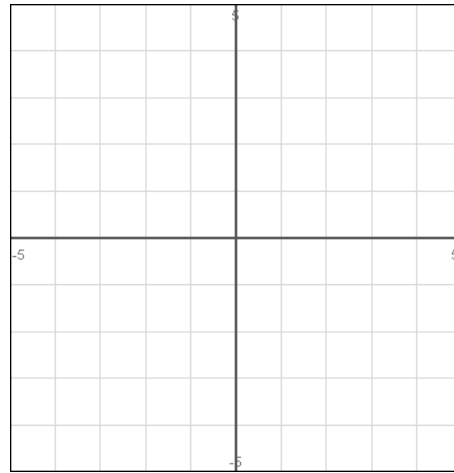


Finding Volumes of Solids Using the Washer Method

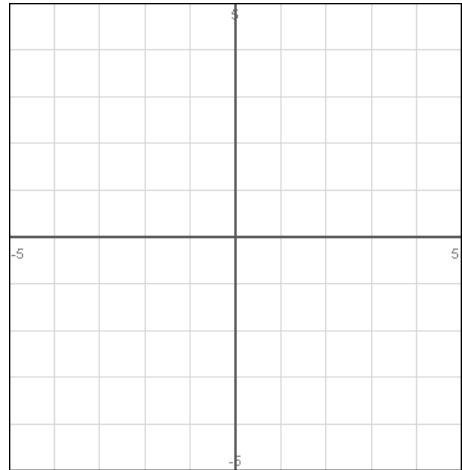
$$\text{Vertical Washers: Volume} = \int_a^b \pi (R^2(x) - r^2(x)) dx$$

$$\text{Horizontal Washers: Volume} = \int_c^d \pi (R^2(y) - r^2(y)) dy$$

1. The region bounded by the curve $y = x^2 + 1$ and the line $y = -x + 3$ is revolved about the x -axis to generate a solid. Find the volume.



2. The region bounded by the parabola $y = x^2$ and the line $y = 2x$ in the first quadrant is revolved about the y -axis to generate a solid. Find the volume.



3. The region between the parabola $y = x^2$ and the line $y = 2x$ in the first quadrant is revolved about the line $x = 2$ to generate a solid. Find the volume.

