

8.11 Washer Method: Revolve Around the x - or y -axis

Calculus

Name: _____

CA #2

For each problem, sketch the area bounded by the equations and revolve it around the axis indicated. Find the volume of the solid formed by this revolution. A calculator is allowed, so round to three decimal places.

1. $y = 4 - x^2$ and $y = 2 - x$. Revolve around the x -axis.

2. $x = 3 - y^2$, $x = 2$. Revolve around the y -axis.

3. $y = (x - 3)^2 - 5$ and $y = -1$. Revolve around the x -axis.

4. Same region as #3, but revolve around the y -axis.

1. $V = \pi \int_2^{-1} [(4 - x^2)^2 - (2 - x)^2] dx \approx 67.858$	2. $V = \pi \int_1^{-1} [(3 - y^2)^2 - 4] dy \approx 20.106$
3. $V = \pi \int_5^1 [(x - 3)^2 - 5]^2 - 1 dx \approx 174.2536$	4. $V = \pi \int_5^{-1} (\sqrt{y+5} + 3)^2 - (\sqrt{y+5} + 3) dy \approx 201.0619$