

Calculus Worksheet #2 Unit 11

Use washers to find the volume generated by rotating the given region about the given line.

For each problem, you must

- sketch the generating region, showing a typical generating rectangle,
- write an expression for the volume generated by this rectangle,
- express the exact volume of the solid as a definite integral, and
- evaluate the integral.

Show all of your work neatly organized on graph paper.

- The region bounded by $y = 2 - x^2$ and $y = 1$ is rotated about the (A) x-axis; (B) line $y = -1$.**
- The region between $x = y^2 - 6y$ and $x = -5$ is rotated about the y-axis.**
- The region enclosed by $y = 4 - x^2$ and $2y = 4 - x^2$ is rotated about the x-axis.**