

Calculus Class Worksheet #3 Unit 11 _____

Use the shell method 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.

1. The region enclosed by $y = 8x - 2x^2$ and the x-axis is rotated about the (A) y-axis ; (B) line $x = -2$.

2. The region enclosed by $y = x^2 - 2x + 2$ and $y = x + 2$ is rotated about the (A) y-axis; (B) line $x = 4$.