

Volume Using Shells

Directions: Find the volume of each solid using cylindrical shells.

1. The region in the first quadrant of $x = 2y^2 - y^3$ is revolved around the x-axis.
2. The region in the first quadrant of $x = 2y^2 - y^3$ is revolved around the line $y = 2$.
3. The region in the first quadrant of $x = 2y^2 - y^3$ is revolved around the line $y = -3$.
4. The region between $y = x$ and $x = y^2 - 4y + 4$ is revolved around the line $y = -1$.
5. The region bounded by $y = \frac{1}{x}$, $x = \frac{1}{2}$, $x = 4$, and the x-axis is revolved around the y-axis.