

Math 232 Worksheet - Shell Method

1. Find the volume of the solid obtained by rotating about the y -axis the region bounded by $y = -x^2 + 4x - 3$ and $y = 0$.
2. Find the volume of the solid obtained by rotating about the line $y = 2$ the region bounded by $y = \sqrt{x}$ and $y = x$. Use (1) the washer method; (2) the shell method.
3. Use the shell method to show that the volume of the unit sphere is $\frac{4\pi}{3}$.