

4. Find the volume of the solid obtained by revolving the region bounded by $y = x$ and $y = x^2$ about the line $x = 3$.

5. Find the volume of the solid whose base is the region bounded by $y = x^2$, $x = 0$, $x = 1$, and the x -axis, and whose cross-sections perpendicular to the y -axis are squares.

6. Find the volume of the solid whose base is the region bounded by $y = e^x$, $x = 0$, $x = 2$, and the x -axis, and whose cross-sections perpendicular to the x -axis are half-circles.