

SECTION 2.2: VOLUMES BY SLICING

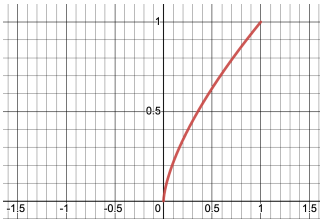
1. Sketch the region R bounded by $y = \sqrt{x}$, $y = 0$, and $x = 4$. Determine the volume of the solid with cross-sections perpendicular to the base and parallel to the y -axis are squares. Attempt to describe and/or draw what this solid looks like.

2. A general formula for volume using slices:

3. Sketch the same region as in problem 1 above (i.e. the region R bounded by $y = \sqrt{x}$, $y = 0$, and $x = 4$). Find the volume of the solid obtained by rotating this region about the x -axis. Attempt to describe and/or draw what this solid looks like.

4. The Disk Method

5. Sketch the region bounded by $y = x^{2/3}$ (sketched below), $x = 0$ and $y = 1$. Find the volume of the solid obtained by rotating this region about the y -axis. Attempt to describe and/or draw what this solid looks like.



6. Sketch the region bounded by $y = \sqrt{x}$ and $y = x^2$. Find the volume of the solid obtained by rotating this region about the x -axis. Attempt to describe and/or draw what this solid looks like.

7. The Washer Method

8. Find the volume of the solid obtained by rotating about the y axis the region bounded by $y = x^2$ and $y = 4x$. (Sketch the region. Draw a slice.)