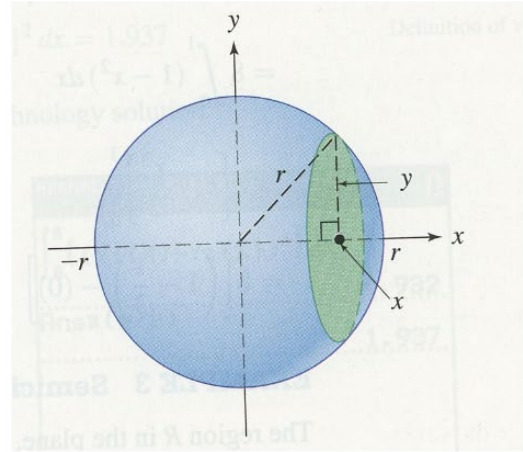
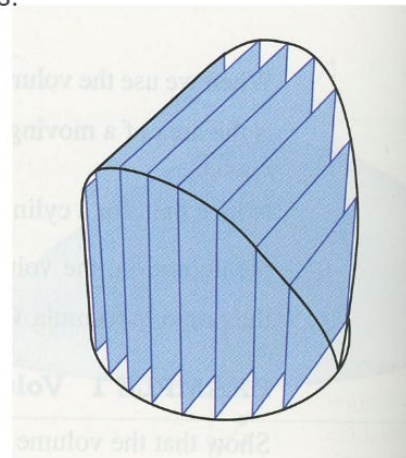


Show that the volume of a sphere of radius  $r$  is  $V = \frac{4}{3}\pi r^3$ .

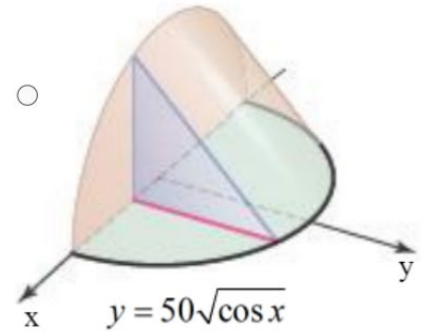
○



The base of a solid  $S$  is a circle of radius 1. For this solid, the cross-sections (slices) perpendicular to the  $x$ -axis are squares. Find the volume of this solid.



Find the volume of the solid whose base is the region bounded by the curve  $y = 50\sqrt{\cos x}$  and the  $x$ -axis on  $[-\pi/2, \pi/2]$  and whose cross sections through the solid perpendicular to the  $x$ -axis are isosceles right triangles with a horizontal leg in the  $xy$ -plane and a vertical leg above the  $x$ -axis.



Find the volume of the solid whose base is the triangle with vertices  $(0,6)$  and  $(2,0)$  and  $(0,0)$  and whose cross sections perpendicular to the base and

- parallel to the  $y$ -axis are semicircles.
- parallel to the  $x$ -axis are semicircles.

