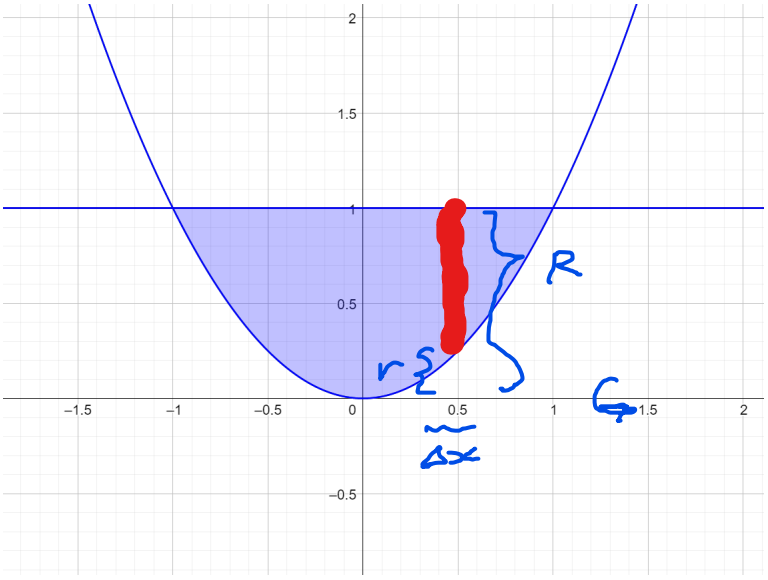
Problem Set 7-Wednesday
6.2: Volumes (Method of Cross-Sections)

Please indicate the members who are present. Also indicate the group coordinator.

Group Number:	SOLUTION KEY
Members:	

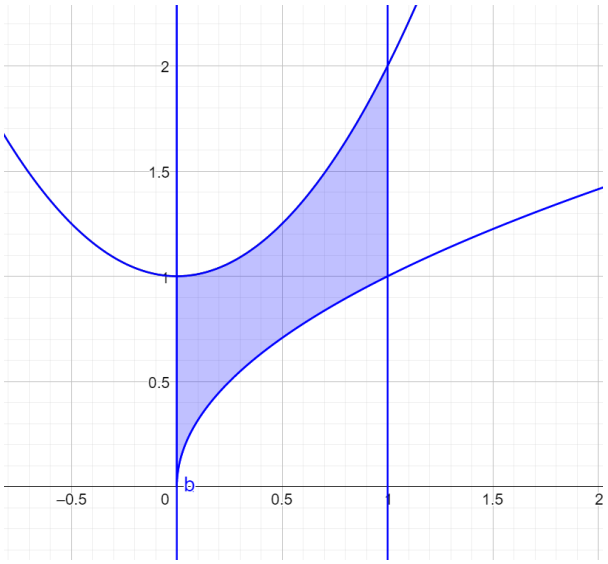
Problem 1

Find the volume of the solid generated by rotating the region bounded by the curves $y = x^2$ and $y = 1$ about the x-axis.



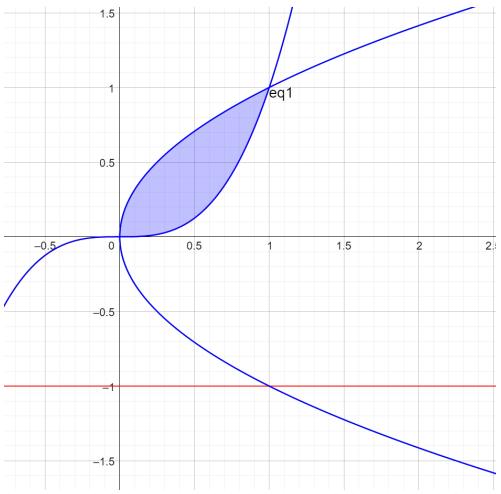
Problem 2

The region bounded by the curves $y = \sqrt{x}$ and $y = x^2 + 1$ between $x = 0$ and $x = 1$ is revolved about the y-axis. Find the volume of the solid generated.



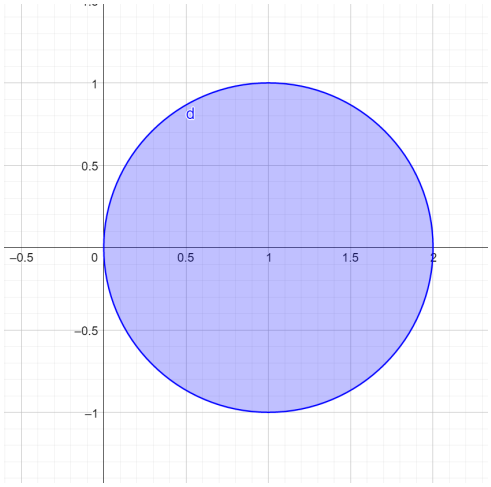
Problem 3

Find the volume of the solid generated by rotating the region bounded by the curves $y = x^3$ and $x = y^2$ about the line $y = -1$.



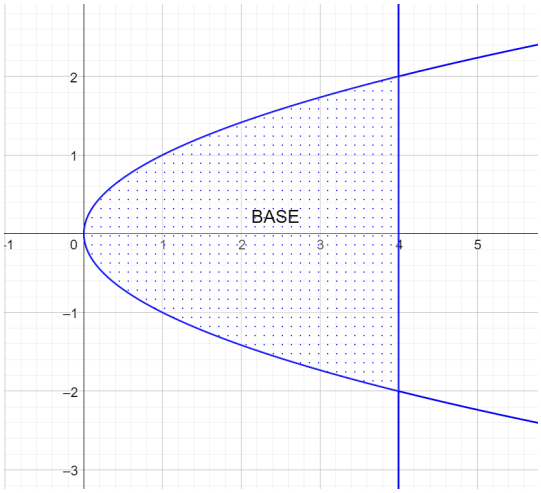
Problem 4

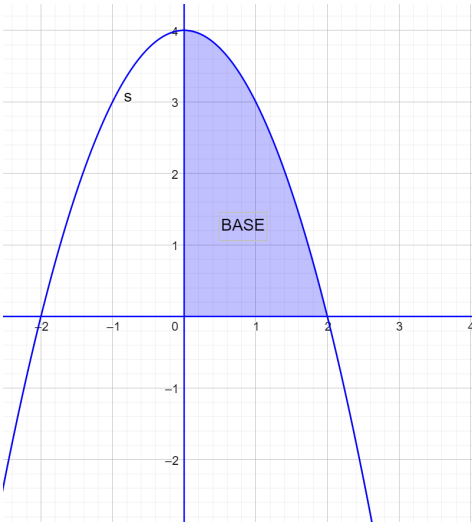
The area enclosed by the circle $y^2 + (x-1)^2 = 1$ is rotated about the y-axis. Find the volume of the resulting solid.



Problem 5

The base of a solid is bounded by the curves $x = y^2$ and $x = 4$. The cross sections of the solid, perpendicular to the x-axis, are semicircles. Find the volume of the solid.



Problem 6

A solid has a base lying in the first quadrant and bounded by the curves $y = 4 - x^2, x = 0$ and $y = 0$. If the cross sections of the solid perpendicular to the y-axis are equilateral triangles with the base running from the y-axis to the curve. Find the volume of the solid.