

MATH PROBLEM OF THE MONTH (October)

Solution

A cylinder is sliced by a plane to form the solid shown. The base edge of the solid is a circle of radius 3. The top edge is an ellipse. The highest point on the ellipse is



6 units above the base. The lowest point on the ellipse is 2 units above the base. What is the volume, in cubic units, of the solid?

Answer. 36π .

The area of the base is 9π . Since the lower height is 2 and the upper height is 6 we can use the average of 4 as the height. Thus, the volume is $9\pi \times 4 = 36\pi$.