

Name _____

Let R denote the region between the graph of $y = x^3 + x$ and the x -axis on the interval $[0, 1]$. Set up, but do not evaluate, definite integrals which represent the volumes of the following solids. Be sure to use proper notation.

1. The solid generated when the region R is revolved around the x -axis.

2. The solid generated when the region R is revolved around the line $x = 3$.

3. The solid generated when the region R is revolved around the y -axis.

4. The solid generated when the region R is revolved around the line $y = -2$.

5. The solid whose base is the region R and whose cross-sections taken perpendicular to the x -axis are semicircles.