

Let R denote the region between the graph of $y = x^{3/2}$ and $y = 8$ on the interval $[0, 4]$. Using two ways for each problem, set up and evaluate definite integrals which represent the volumes of the following solids.

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 y -axis.
3. The solid generated when the region R is revolved around the line $x = 6$.
4. The solid generated when the region R is revolved around the line $y = 9$.