For each three dimensional object described below,

(a) Sketch the object

(b) Set up an integral that gives you the volume of the object

(c) Evaluate the integral to find the volume

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1. The solid formed when the graph of $y = x^2 + 1$ from $x = 0$ to $x = 2$ is rotated about the x-axis.

2. The solid formed when the region bounded by $y = x^2$ and $y = 4$ is rotated about the x-axis.

3. Repeat #1 and #2, but rotating the graph (in # 1) or the region (in # 2) about the y-axis rather than the x-axis. (In the case of #2, only rotate the region bounded by $y = x^2$ and $y = 4$ that lies in the first quadrant.)

4. Repeat #1again, but this time rotating the graph about the line $y = 6$.

5. The sphere of radius r.