1. The shaded region is rotated around the $x$-axis. Find the volume of the resulting solid.

2. The shaded region is rotated around the $y$-axis. Find the volume of the resulting solid.

3. The shaded region is rotated around the $y$-axis. Find the volume of the resulting solid.

4. The shaded region is rotated around the $x$-axis. Find the volume of the resulting solid.

