1(6) The area between $y = 0$ and $y = x + 1$ for $x \in [0, 1]$ is rotated around the $y$-axis. Find the volume using the shell method.

2(6) The area between $y = 3 - x^2$ and $y = x^2 + 1$ for $x \in [0, 1]$ is rotated around the $y$-axis. Find the volume using the shell method.