

1. The region bounded between $y = 1/x^2$, $y = 0$, $x = 1$ and $x = 2$ is rotated around the x -axis. Set up an integral that gives the volume of the solid obtained. You are not required to evaluate the integral, but you should sketch the solid.
2. The region bounded between $y = 1/x^2$, $y = 0$, $x = 1$ and $x = 2$ is rotated now around the line $x = 3$. Set up an integral that gives the volume of the solid obtained. You are not required to evaluate the integral, but you should sketch the solid.
- 3.* Use cylindrical shells to find the volume of the torus obtained by revolving the circle $x^2 + y^2 = a^2$ about the line $x = b$, where $b > a > 0$. (Hint: It may help in the computation to think of an integral as area.)