

I chose to use Region B (bounded by $x=0$, $y=\sqrt{x}$, and $x=9$) and the semicircle as my cross section. The integral to calculate the volume is

$$\begin{aligned}
 & \int_0^9 \pi \left(\frac{\sqrt{x}}{2} \right)^2 dx \\
 &= \pi \int_0^9 \frac{x}{4} dx \\
 &= \frac{\pi}{4} \left[\frac{x^2}{2} \right]_0^9 \\
 &= \frac{\pi}{8} (81 - 0) \\
 &= \frac{81\pi}{8}
 \end{aligned}$$

This value is corroborated to four decimal points using the slice generator. The final model can be downloaded and viewed in OpenSCAD or seen here:



