

Let V be the volume. Then $V = \pi r^2 h$ and $\Delta V \approx dV = 2\pi r h dr + \pi r^2 dh$ is an estimate of the amount of metal. With $dr = 0.05$ and $dh = 0.1$ we get $dV = 2\pi(4)(18)(0.05) + \pi(4)^2(0.2) = 10.4\pi \approx 32.67 \text{ cm}^3$.