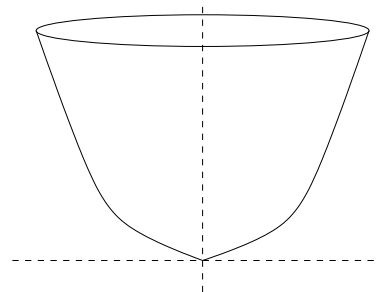


Quiz #4

Quiz Section: _____

SHOW YOUR WORK

1. (6 points) The portion of the graph of $y = x^3$ between $x = 0$ and $x = 1$ is rotated around the y -axis to form a container. The container is filled with water. Compute the work required to pump all the water out over the side. Distance is measured in meters, the density of water is 1000 kg/m^3 and the acceleration due to gravity is 9.8 m/sec^2 .



2. (4 points) Compute the average value of the function $f(x) = \frac{\ln(x)}{x}$ on the interval $1 \leq x \leq e$.