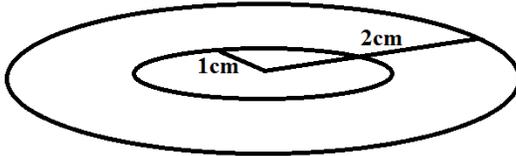Read each problem **very carefully** before starting to solve it and do only what is asked. Each problem is worth around 5 points. It is necessary to show **all** your work. Correct answers without explanations are worth 0 points. GOOD LUCK!!

1. [4 points] Find the total mass of the washer shown in the figure, whose radial density is $\rho(r) = 50(4 - r)$ gr/cm^2.

2. [6 points] The floor of a solid consists of the region enclosed by the parabola $y = 10 - x^2$ and the x-axis. All cross-sections perpendicular to the y-axis are semicircles.

(a) Make a figure to show how the solid looks like. (Do as decent a job as you can.)

(b) Calculate the volume of the solid.