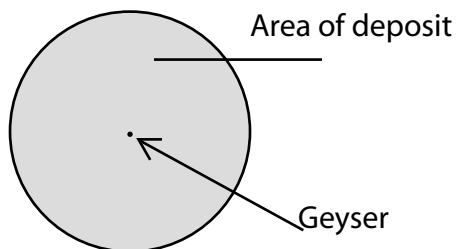


**11.** (8 pts) The area surrounding a geyser is found to have high quantities of mineral deposits. Assume that at any radius  $r < 5$  meters,  $5 - r$  grams per square meter of the mineral silica can be found. How much silica is there, in total, within 5 meters of the geyser? Show your work.



This is a clone of the individual homework problem 8.3.11. Just as in that problem, you have to slice the circular region into strips which can be regarded as rectangles with length  $2\pi r$  and width  $dr$ :

There are  $\int_0^5 (5 - r)2\pi r dr = 5^3\pi/3 \approx 131$  grams of silica deposit