Math 203: HW 6

Due on Thursday, June 13

Summer '13

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Problem 1

You have been asked to design a can (in the shape of a right cylinder, with a top and a bottom). You have been told that the volume of this can must be $1000cm^3$ (which is 1 liter btw, do not do this problem in terms of liters). What are the dimensions that minimize the surface area? (note that with these dimensions, the cost of producing this can will also be minimized) Make sure to support any claims made about max/min by a derivative test. Hints: The volume of a circular cylinder is $\pi r^2 h$ ad the surface area is $2\pi r^2 + 2\pi rh$.

REMINDER: THERE WILL BE A DERIVATIVE QUIZ ON THURSDAY!!!!