

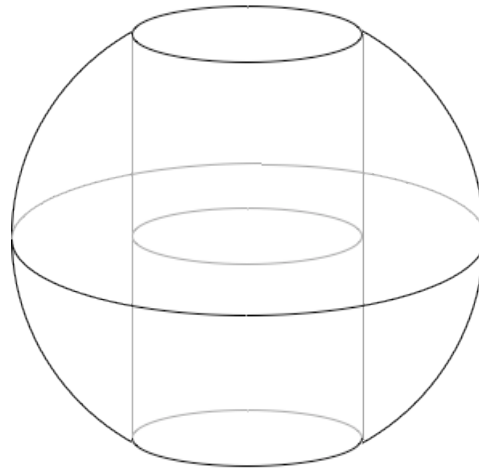
Mathematics 1100Y – Calculus I: Calculus of one variable  
TRENT UNIVERSITY, SUMMER 2011

**Assignment #9**

**The Hole Thing**

*Due on Monday, 11 July, 2011.*

A cylindrical hole is made through a sphere of radius  $r$ , after which the resulting solid has height  $h$ .



1. Find the volume of this solid. [10]

HINT: Surprisingly, the answer does not depend on  $r$ , except for the obvious requirement that  $h \leq 2r$ .