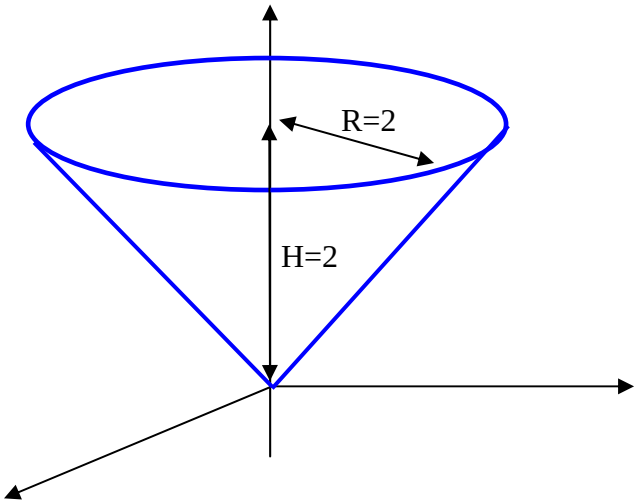
Please sign your name: _____

**Math 335-002 • Spring 2015 • Quiz #6 • Prof. Victor Matveev**

**1.** Consider calculating the mass of a circular cone of base radius R=2 and height H=2 with density $\delta(\mathbf{r}) = z^2$ (see Figure below).




**a)** Set up the integral for calculating this mass using Cartesian coordinates

**b)** Set up the integral for calculating this mass using Cylindrical coordinates

**c)** Set up the integral for calculating this mass using Spherical coordinates (note: the top surface is flat, so be careful with limits on ρ)

**d)** Calculate one of the above integrals