CYLINDRICAL INTEGRALS

For each problem below, set up and evaluate a triple integral in cylindrical coordinates.

1. Use a triple integral in cylindrical coordinates to find the volume of a cylinder of height H and radius R.

2. Let V be a sphere with center at the origin and radius $= R$. Find the volume of V..

3. Find the volume of the solid bounded by the sphere $x^2 + y^2 + z^2 = 1$ and the cone $z = \sqrt{x^2 + y^2}$.

4. Find the volume of the solid bounded above by $z = -x^2 - y^2 + 2$ and below by the xy-plane.

5. Find the volume of the solid bounded above by $z = -x^2 - y^2 + 1$ and below by $z = x^2 + y^2 - 1$.