

1. Write down a triple integral representing the volume of a slice of the cylindrical cake of height 2 and radius 5 between the planes  $\phi = \pi/6$  and  $\phi = \pi/3$ . Evaluate this integral.
2. Suppose  $W$  is the region *outside* the cylinder  $x^2 + y^2 = 1$  and *inside* the sphere  $x^2 + y^2 + z^2 = 2$ . Calculate

$$\int_W (x^2 + y^2) dV$$