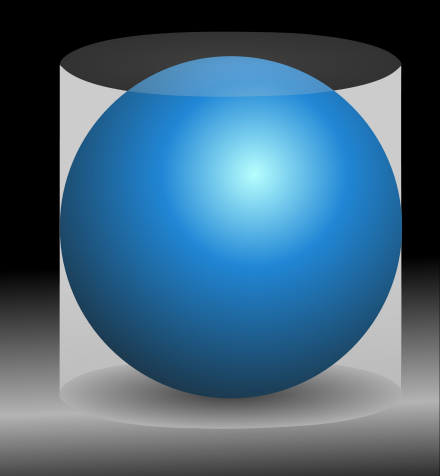
**The Sphere in the Cylinder Task**

A sphere is inscribed in a right circular cylinder, as shown in the diagram below. Find the ratio between the volume of the sphere and the volume of the right circular cylinder. Show your reasoning.