**Challenge 10: Spheres and Cubes**
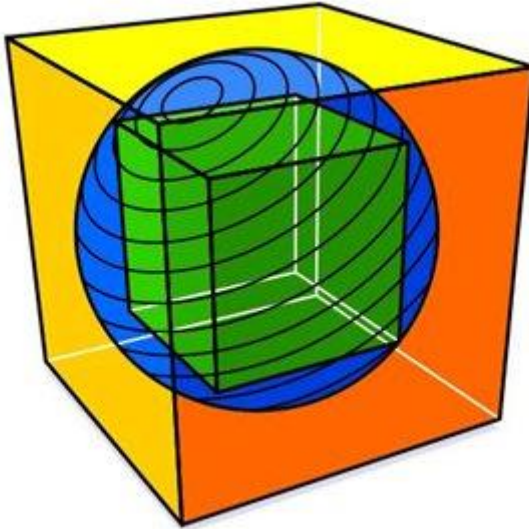
A cube sits in a sphere which just touches the eight corners of the cube. The sphere is itself sitting in a cube which just touches the edges of the sphere. How many times larger is the volume of the larger cube than the volume of the smaller cube?