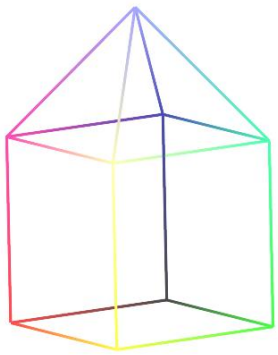
# The Problem of the Month
# April 2023

## The Problem:

Consider a cube with each edge of length one. Now construct a square based pyramid, also with each edge of length 1, on the top face of the cube, as shown in the figure below. Using only geometry (no algebra), find the radius of the smallest sphere that can contain this capped cube.



**The Solution**: Erect a square based pyramid (identical to the cap) on the inside of the bottom face of the cube. Connect the summit of this pyramid to that of the pyramid cap.

It is now clear that the peak of the lower pyramid is the center of the sphere we seek and that its radius is 1.