

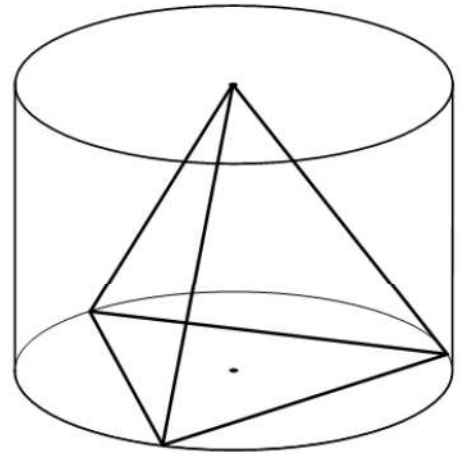
Task 7

A regular tetrahedron has four faces, each of which is an equilateral triangle.

A wooden puzzle consists of several pieces that can be assembled to make a regular tetrahedron.

The length of one edge of the tetrahedron is $2a$.

The manufacturer wants to package the assembled tetrahedron in a clear cylindrical container, with one face flat against the bottom and the apex just touching the top.



If the volume of the cylindrical container is $\frac{8\sqrt{6}}{9}\pi a^3$ find the height of the puzzle.

