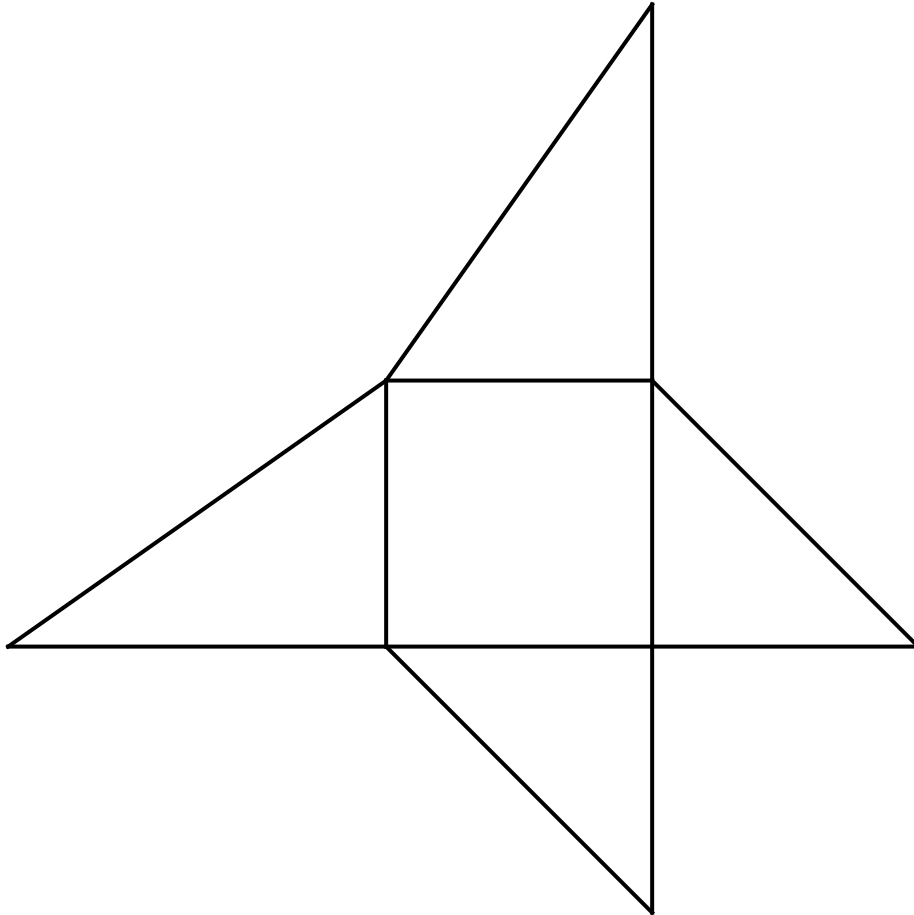


PYRAMID PUZZLE I

Cut out three copies of the following shape and fold up and tape each of them together to make three square-based pyramids. Now fit these pyramids together to make a cube. What does this tell you about the volume of each pyramid with respect to the volume of the cube?



PYRAMID PUZZLE II

Cut out two copies of the first shape below, and one copy of the second shape below, and fold up and tape each of them together to make three triangle-based pyramids.

Assuming only that the volume of a triangular pyramid is determined by the area of a base and the associated height (altitude) with respect to that base, explain why these three pyramids have the same volume.

Now fit these pyramids together to make a prism having an equilateral triangle as a base. What does this tell you about the volume of each pyramid with respect to the volume of the prism? (These shapes can be made out of Polyhedron if you have it.)

