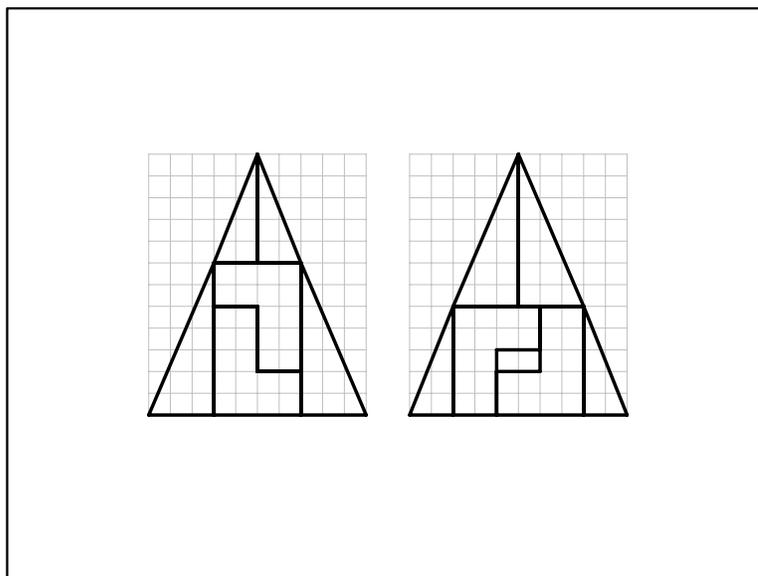


Summer Puzzles for the Freshman Discovery Seminar on Polyhedra

1. Look at the two isosceles triangles below. Even though they have the same base and height, and hence the same area, I have cut up and rearranged the pieces in the first triangle to form the second triangle, and have managed to leave a hole in the middle. How is this possible?



2. A new form of molecular carbon was recently discovered, composed of 60 carbon atoms. Who discovered it? What is it called? Sketch its structure.
3. Find a way to cut a cube into two pieces with a single planar slice so that the cross-section is a perfect regular hexagon.
4. Find a way to cut up a rectangle that is twice as long as it is wide, into a small number of polygonal pieces that can be rearranged to form a perfect square.