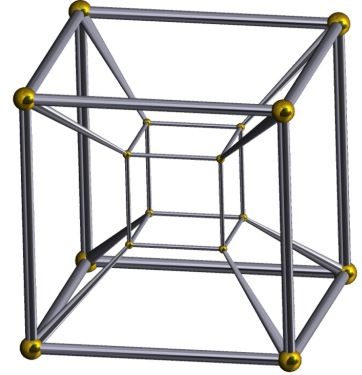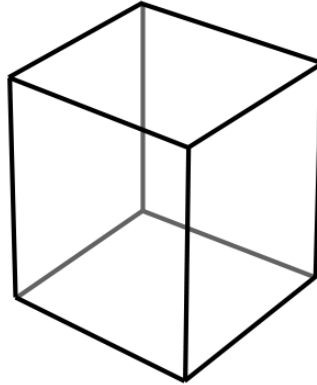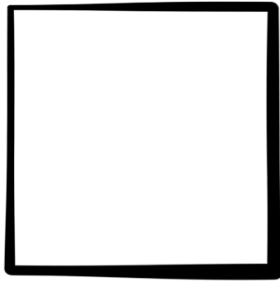# Mathletes Problem of the Week #8

Squares in Space

We all know that a square is a two-dimensional shape that has four edges which meet at four right angles. A cube is a 3-dimensional shape made up of 2-dimensional square faces, all meeting at right angles. A tesseract is a 4-dimensional shape made up of 3-dimensional cubes, which all meet at right angles. It is hard to picture a 4-D shape since we live in a 3-D world, but the image on the right is one way mathematicians sometimes represent it.

a) How many pairs of parallel sides are in a square? Show how you know.
b) How many pairs of parallel sides are in a cube? Show how you know.
c) How many pairs of parallel sides are in a tesseract? Show how you know.

Solutions & Explanations: (Solve one or solve them all. Attach more paper if you need to!)

Name _____   Class _____

(First and last name, please!)   Solutions due: January 11th