

Assignment #1
Due Wednesday, July 11

1. What convex polyhedra can be constructed with equilateral triangles, such that adjacent triangles are noncoplanar?
2. Make some examples and conjecture a three-dimensional analog of the Pythagorean Theorem for “right” tetrahedra.
3. Make a proposal for the measurement of a three-dimensional angle formed by planes meeting at a common point. Justify your proposal.
4. Make a proposal for the definition of a “triangle” on a sphere. Justify your proposal.
5. Construct three-dimensional “analogs” of
 - (a) Triangles
 - (b) Isosceles triangles
 - (c) Equilateral triangles
 - (d) Quadrilaterals
 - (e) Trapezoids
 - (f) Parallelograms
 - (g) Rectangles
 - (h) Rhombi
 - (i) Squares