

Project – Coloring Platonic Solids:

Problem Set 4: Coloring Platonic Solids

Name:

.....

Dual:

1. “Dual” means the following:
 - a. Two solids have the same number of edges
 - b. The number of edges of one solid is equal to the number of vertices of the other.

Which pair of platonic solids is dual? Hint: you can construct the duals by the following

- i. Plot a point in the center of each face.
- ii. Join the points by edge...What do you see??

Coloring Platonic Solids:

Rule:

Do not use the same color to paint two faces (vertices or edges) next to each other. (i.e., two faces that share an edge)

2. What is the minimum number of colors to paint the faces of a tetrahedron? Vertices? Edges??
3. Hexahedron?
4. Octahedron? (*)
5. Dodecahedron? (*)
6. Icosahedrons? (*)
7. Stellated ones? (*)
8. Choose a figure to color faces, vertices, and edges without having any adjacent faces, vertices, and edges having the same color.