

1014-51-1573 **Kevin Ehly*** (ehlyk@lafayette.edu), Box 8354 Farinon Center, Lafayette College, Easton, PA 18042. *A Combinatorial Approach to the Symmetries of the Icosahedron Using K-6*. Preliminary report.

The Icosahedron can be represented by the normal vectors of the hyperplanes which cut it in half. The complete graph K-6 is a nice representation the dependencies between these vectors. While every symmetry of the Icosahedron can be represented on the K-6 graph, we are interested in what the symmetries of the D6 graph do to the Icosahedron. Half of these symmetries turn out to be geometric, while the other half breaks the geometric symmetry of the Icosahedron, and creates a new form of combinatorial symmetry. (Received September 28, 2005)