1102-14-270 **Sheamin Khyeam** (sheaminkhyeam@gmail.com), 29 Washington St., Tenafly, Tenafly, NJ 07670, and **Jin Lee*** (nycrick@gmail.com), 29 Washington St, Tenafly, NJ 07670. *Vertex Diagonal Sequence (VDS) Patterns in the Polygons and Polyhedrons.*

A Vertex Diagonal Sequence (VDS) is a geometrical term used for a group of numbers that each represents the number of edges that meet at each vertex. Also, it is possible to triangulate a given plane or volume by connecting vertices with lines that don't already meet. The purpose of this research is to find VDS patterns between a triangulated polyhedron and its VDS sequence. This paper shows that both any polygons with two dimensional shape and certain polyhedrons will have a pattern in their VDS. Polyhedrons such as pyramids were analyzed by assuming that they have vertex diagonals depending on whether one allows three or more lines to meet at a point. These results can help find new properties of complicated structures with polygons and polyhedrons by setting up generalized formula for the patterns. Also finding a pattern in the VDS could help mathematicians and engineers efficiently analyze and develop new geometrical shapes, with more stable triangular elements. (Received July 30, 2014)