

1135-51-452

**Derege H Mussa\*** (dxm146130@utdallas.edu), Derege H.Mussa, Department of Mathematical Science, University of Texas at Dallas, Richardson, TX 75080. *Dual Tetrahedra and Their Relation*. Preliminary report.

Tetrahedron (plural Tetrahedra) is a three dimensional solid having four vertices, four triangular faces and six edges which don't lie in a single plane. If the tetrahedron  $T$  with a six tuple  $S = (a, b, c, d, e, f)$  exists if and only if the tetrahedron is facial and the McCrea determinant is positive. If  $S$  is a six tuple for tetrahedron  $T$ ,  $S = (a, b, c, d, e, f)$  then the faces  $a, b, c$ ;  $a, e, f$ ;  $b, d, f$  and  $c, d, e$  and the edges at the vertices has the patten  $a, b, f$ ;  $a, c, e$ ;  $b, c, f$  and  $d, e, f$ . If the pattern of faces and vertices of a tetrahedron is interchanged then  $T$  is called the Dual of Tetrahedron  $T$  however these two tetrahedron are not congruent. Nets which are obtained by cutting three edges of the tetrahedron at a vertex of the tetrahedron or along a sequence of three edges that visit each vertex exactly once. The paper discusses: new findings about the Dual of Tetrahedra & their Nets and Self Dual Tetrhedron. (Received September 04, 2017)