

1056-Z1-1081 **Charles Waiveris*** (waiveris@ccsu.edu), Math Department, Central Connecticut State University, 1615 Stanley Street, New Britain, CT 06050. *Three Simple Questions about Tetrahedra*. Preliminary report.

Even though tetrahedra are three dimensional objects the basic questions of congruence, similarity, and measure can be approached using two dimensional techniques. Determining analogous statements to the familiar congruence theorems for triangles that can be applied to tetrahedra requires only plane geometry. Similarity is more interesting but requires only plane geometry and algebra. It isn't enough to just specify the angles in each face. Finally just how big is that solid angle at the vertex of a tetrahedron. Or as has been asked, "How pointy is the vertex?". A degree measure of the solid angle can be obtained in terms of the face angles at the vertex. This measure needs only plane geometry and trigonometry to understand and can even be checked with a three dimensional protractor. These simple questions provide fertile ground for further interesting and unanswered questions. (Received September 20, 2009)