1125-52-1750          **Braxton A Carrigan\*** (`carriganb1@southernct.edu`) and **Bruce W Atkinson**. *On the Bounds of a Golden Triangulation Refinements.*

We are concerned with triangulating point sets with golden triangles, which are isosceles triangles where the ratio of the longer side to the shorter side is the golden ratio. We will start with some basic results concerning vertices, side lengths, and areas of the triangles and their relationships to the golden ratio and classify all convex polygons which can be triangulated with golden triangles and determine which of them can be done in a minimal sense. In an attempt to establish a refinement process for golden triangulations we define a splitting process that produces a proper refinement and preserves specific desirable properties. Furthermore we will analyze lower bound criteria for finding efficient refinement algorithms, and establish some basic upper bound techniques. (Received September 19, 2016)