1151-52-4 **Joehyun Kim*** (joehyunkim5@gmail.com), **Kelvin Kim** and **Jeewoo Lee**. *The Largest Angle Bisection Procedure.*

For a given triangle ΔABC, with $\angle A \geq \angle B \geq \angle C$, the largest angle bisection procedure consists in constructing AD, the angle bisector of angle $\angle A$, and replacing ΔABC by the two newly formed triangles, ΔABD and ΔACD. Let Δ_{01} be a given triangle. Bisect Δ_{01} into two triangles, Δ_{11} and Δ_{12}. Next, bisect each Δ_{1i}, $i = 1, 2$, forming four new triangles Δ_{2i}, $i = 1, 2, 3, 4$. Continue in this fashion. For every nonnegative integer n, $T_n = \{\Delta_{ni} : 1 \leq i \leq 2^n\}$, so T_n is the set of 2^n triangles created after the n-th iteration. Define m_n, the *mesh* of T_n, as the length of the longest side among the sides of all triangles in T_n. Also, let γ_n be the smallest angle among the angles of the triangles in T_n. We prove the following results:

- $\gamma_n = \min(\angle C, \angle A/2)$, for all $n \geq 1$.
- $m_n \to 0$ as $n \to \infty$.
- Unless Δ_{01} is an isosceles right triangle, the set $\bigcup_{n=0}^{\infty} T_n$ contains infinitely many triangles no two of which are similar.

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