Equilateral Triangles

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Theorem 6.1. An equilateral triangle is equiangular, hence regular

Proof. Let ABC be an equilateral triangle. Because triangle ABC is equilateral, we know side AB is congruent to side BC and congruent to side AC. By Euclid's Proposition I.5 says that the base angles of an isosceles triangle are congruent. Using this, we can say AB and AC are the legs of the triangle and CB is the base. Then angles ABC and ACB are congruent. Similarly we can say AB and BC are the legs of the triangle with AC as the base. Then angles BAC and ACB are congruent. Since ACB is congruent to ABC and also congruent to BAC, then angle ABC is congruent to BAC, therefore making all the angles equal to one another forcing the triangle to be equiangular and regular.

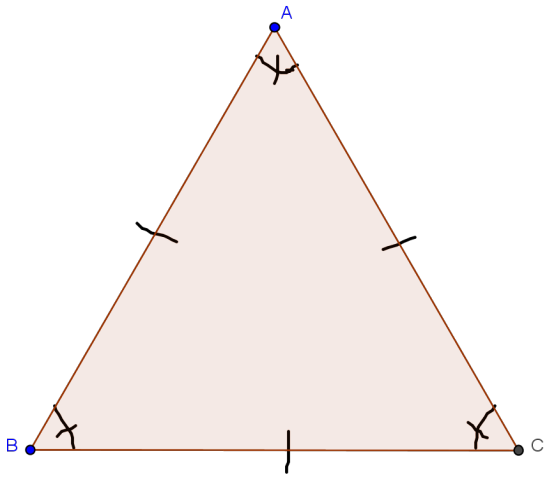

Figure 1: Equilateral triangle ABC with equal angles...hence regular

Refereed by Hailey Manternach

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