

Let K be an equilateral triangle in the plane. Prove that for every $p > 0$ there exists an $\varepsilon > 0$ with the following property: If n is a positive integer, and T_1, \dots, T_n are non-overlapping triangles inside K such that each of them is homothetic to K with a negative ratio, and

$$\sum_{\ell=1}^n \text{area}(T_\ell) > \text{area}(K) - \varepsilon,$$

then

$$\sum_{\ell=1}^n \text{perimeter}(T_\ell) > p.$$