

Minimizing inradius for a given surface area

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It is well known that among all convex bodies in $\mathbb{R}^n$ with a given surface area, the Euclidean ball has the largest inradius. We will show that this result can be reversed in the class of convex bodies with curvature at each point of their boundary bounded below by some positive constant λ (λ -convex bodies). In particular, we show that among λ -convex bodies of a given surface area, the λ -convex lens (the intersection of two balls of radius $1/\lambda$) minimizes the inradius which answers a special case of Bezdek's conjecture.

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