A REFINED REVERSE ISOPERIMETRIC INEQUALITY IN THE PLANE

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Abstract. It is proved that if $\gamma$ is a closed strictly convex curve in the plane with length $L$ and area $A$, then

$$L^2 \leq 4\pi A + 2\pi|\tilde{A}|,$$

with equality holding if and only if $\gamma$ is a circle, where $\tilde{A}$ denotes the oriented area enclosed by the locus of curvature centers of $\gamma$.


Keywords and phrases: Minkowski’s support function, locus of centers of curvature, integral of radius of curvature, reverse isoperimetric inequality.

REFERENCES
