

ZMATH 2010b.00478

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A minimum requiring angle trisection.

Normat. 57, No. 2, 78-89 (2009).

Summary: Given a piece of foldable material (e.g. paper) in the shape of a right-angled triangle. Fold it by placing the right-angled corner on the hypotenuse. How should this be done in order to minimize the area of the folded triangle? The problem leads to a cubic equation whose relevant solution turns out to involve an angle trisection (and thus obtainable by a succession of foldings). Variations of the problem are considered, in particular letting one of the acute corners instead be placed on the opposite side.

Classification: G90

Keywords: paper folding; minimum area; cubic equation; angle trisection