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Points covered an odd number of times by translates.

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Summary: Given an odd number of axis-aligned unit squares in the plane, it is known that the area of the set whose points in the plane that belong to an odd number of unit squares cannot exceed the area of one unit square, that is, 1. In this paper, we consider the same problem for other shapes. Let T be a fixed triangle and consider an odd number of translated copies of T in the plane. We show that the set of points in the plane that belong to an odd number of triangles has an area of at least half of the area of T . This result is best possible. We resolve also the more general case of a trapezoid and discuss related problems.

Classification: G95 G45

Keywords: fixed triangle; area; trapezoid

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