

Question:

Let T be a rational number. Two coplanar squares S_1 and S_2 each have area T and are arranged to form a nonconvex octagon. The center of S_1 is a vertex of S_2 and the center of S_2 is a vertex of S_1 . Compute $\frac{S_1 \cup S_2}{S_1 \cap S_2}$.

