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On affine invariant points

Affine invariant point is a function f from the set of convex bodies in  $\mathbb{R}^n$  into  $\mathbb{R}^n$  satisfying the condition  $f(\varphi(K)) = \varphi(f(K))$ for any convex body K and any affine transformation  $\varphi$ . We design a new class of affine invariant points. Denoting by  $\mathcal{F}$  the set of all affine points we answer the question by Grünbaum how big is the set  $\{f(K) \mid f \in \mathcal{F}\}$  for any given convex body K.