

A problem based on a conversation with Alec Jones. Consider a variation on the “concavity classes” of polygons as described by OEIS sequence A227910. Say that two  $n$ -gons are in the same concavity class if one can be continuously deformed into the other (or a mirror image of the other) while (1) remaining an  $n$ -gon the entire time, and (2) preserving the number of sides of the convex hull.

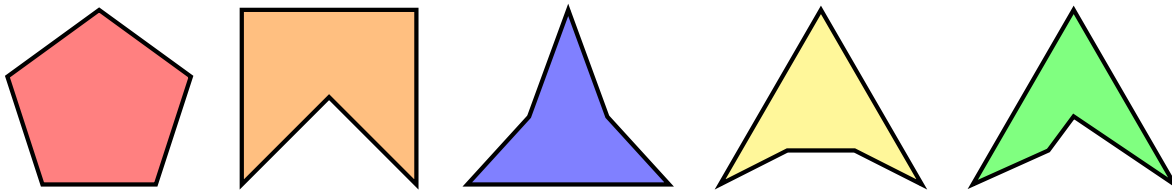


Figure 1: The  $a(5) = 5$  concavity classes on the pentagon.

**Question.** How many convexity classes are there of an arbitrary  $n$ -gon?

**Related.**

1. What is the smallest square lattice that contains at least one representative of each concavity class of the  $n$ -gon for some fixed  $n$ ? (That is, the polygons must have integer coordinates.)
2. (Is this the correct definition?)

**References.**

<https://oeis.org/A227910>