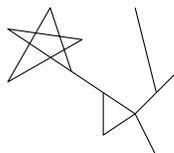
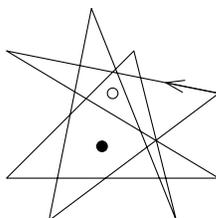


Comprehension questions

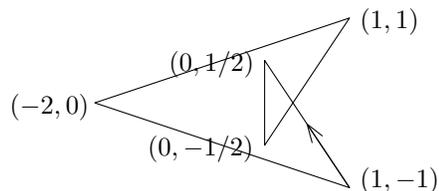
PROBLEM 3.1. *Can a polygonal loop trace out this shape:*



PROBLEM 3.2. *What's the winding number of the loop we've drawn, around the region with the white dot? And the region with the black dot?*



PROBLEM 3.3. *What number does the shoelace formula give for the loop below? And geometrically, what does that number mean?*



PROBLEM 3.4. *Find a polygonal loop which divides the plane into three regions (including the unbounded region), and for which the shoelace formula yields 0.*

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18.900 Geometry and Topology in the Plane
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