In-Class Exercise 1: Lines Intersecting Segment

What is the shape of the set of duals of all non-vertical lines that intersect a given line segment $s$?

In-Class Exercise 2: Locally vs. Globally Convex

We are given a sequence of points $p_0, p_1, \ldots, p_{n-1}$ in the plane, such that for all $i \in \{0..n-1\}$, the sequence $p_i, p_{i+1}, p_{i+2}$ are vertices of a triangle in counterclockwise order (indices are understood modulo $n$). Is this necessarily the sequence of vertices (in counterclockwise order) of a convex polygon?