ASSIGNMENT 6

ACKNOWLEDGE YOUR SOURCES.

1. [10 marks] Design a polynomial time algorithm to find a path from point $s$ to point $t$ among disjoint disc obstacles in the plane. Do not invest too much energy in the best run time, but do be sure to justify correctness. Give a high-level description of your algorithm, not detailed pseudo-code. You may assume some geometric primitives for pairs of discs without giving details.

2. [10 marks] Minkowski sums
   
   (a) [7 marks] Give an $O(n \log n)$ time algorithm to find the Minkowski sum of $n$ line segments in the plane, where each line segment has one endpoint at the origin. Prove correctness.
   
   (b) [3 marks] Which regular polygons can be realized this way? Prove.