COT 4521: Intro. to Computational Geometry (Fall 2020)

Worksheet 5

Ground Rules

This assignment is intended to be solved within your group. However, you must submit your own answers. For all questions we expect you to show yours work!

Submission

Upload your answers and associated work to canvas as a single scanned, typed, or photographed PDF document. Be sure that your submission is legible.

Assignment Instructions

1. Given the 2 convex polygons, A and B, show the steps of the $O(M+N)$ algorithm to find $A \cap B$ discussed in class. Your algorithm should start at a_0 and b_0. (Use the pages at the end of the document.)

2. Describe how you would modify the algorithm to find $A \cup B$, $A \backslash B$, and $A \ominus B$. (hint: describe it in terms of inner and outer chains.)

3. Describe you might find the intersection between 2 non-convex polygons by utilizing the convex polygon intersection algorithm.