

# COT 4521-001: Introduction to Computational Geometry (Fall 2018)

## Worksheet 2

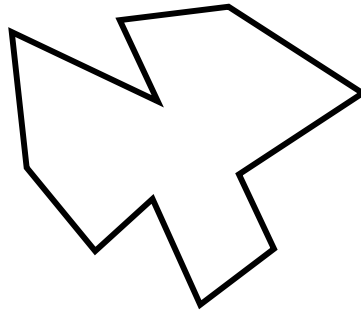
### 1 Ground Rules

This assignment is intended to be done alone. You may ask others for high-level help. However, the answer must be yours.

### 2 Assignment

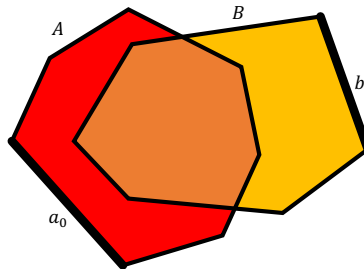
1. For the following polygon:

- Draw all possible edges between non-adjacent vertices.
- Denote those segments which are diagonals and those which are not.
- For non-diagonal segments, state the reason they are not considered diagonal.



- Is the polygon convex? Why or why not?

2. 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  $b_0$ .



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

### 3 Submission

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