

**Name:**

**Student ID:**

## CS130 Homework 2

1. Come up with an algorithm (give pseudocode) that determines whether two line segments in 2D space intersect each other and where the point/region of intersection is if they do. Specifically, your solution should return the following:
  - No, if no intersection
  - Yes, if intersection, and
    - if there's only one point of intersection, return it
    - if there's an interval of intersection, return the endpoints of the interval
2. What are the major steps in the graphics pipeline?
3. In the DDA algorithm from lab 2, a lines slope is compared to 1 to distinguish between cases. Whats special about 1? Why not 2?
4. **(True/False)** Using the alpha channel allows you to represent more unique colors.
5. For each sentence completion below, mark whether the completed sentence is true or false.

The midpoint (or Bresenham) algorithm for rasterizing lines is optimized relative to the DDA algorithm in that it

**(True/False)** avoids a round operation.

**(True/False)** is incremental.

**(True/False)** uses only integer arithmetic.