

# EXERCISES FOR INF3320

## THE OPENGL PIPELINE

1. Prove that the intersection of two convex polygons give exactly nothing or a convex polygon.
2. Given two convex polygons, explain how one easily can check if these intersect each other.
3. Develop an algorithm for finding the intersection between two line segments,

$$\mathbf{p}(s) = (1 - s)\mathbf{p}_0 + s\mathbf{p}_1 \quad \text{and} \\ \mathbf{q}(t) = (1 - t)\mathbf{q}_0 + t\mathbf{q}_1.$$

Implement your algorithm in C++ using GLM.

4. Develop an algorithm that finds intersections between two convex polygons in  $\mathbb{R}^2$ , and implement in C++ using GLM.
5. Develop an algorithm for finding the barycentric coordinate of a point in relation to a triangle. Implement your algorithm in C++ using GLM.