COMP 258 Homework 1 Sep. 6, 1995, **Due:** Sep. 13, 1995

Problems

1. Present an algorithm which checks whether a given 2-D polygon is convex. What is the running time of your algorithm? (10 points)
2. Give a linear time algorithm for computing the convex hull of a non-convex 2-D polygon. You can assume that the polygon is not self-intersecting. (10 points)
3. Given a polyhedron in 3-D (with no self-intersections), present a simple algorithm to check whether it is convex. What is the running time of your algorithm? (10 points)
4. **Extra Credit:** Given a 2-D non-convex polygon, present an algorithm to decompose it into convex pieces. You should try to minimize the number of convex pieces (10 points)