CISC-868 FALL 2011

HOMEWORK 3

These questions come from *Discrete and Computational Geometry* by Satyan Devadoss and Joseph O' Rourke.

Exercise 2.23: Given a point set S, design an algorithm that finds some polygon (any polygon) whose vertices are precisely S.

Exercise 2.31: It might seem that the highest and lowest points of A and B should always be the points of tangency we are looking for. Find examples where this is not the case.

Exercise 2.37: Detail a method to determine whether a triangle face $f = (a, b, c)$ is visible from p.

Exercise 2.38: Let Q be a regular tetrahedron and p a point outside Q. What is the greatest number of faces $\text{conv}(Q \cup p)$ can have for any p? What is the fewest? Can $\text{conv}(Q \cup p)$ have an odd number of faces?