Problem Set 8

Due: Wednesday, April 12, 2017

Solve Problem 8.1 and optionally Problem 8.2.

Problem 8.1 [Mandatory, Collaboration exactly with your project group].
Each week from now on, we will ask you to tell us about your progress from the last week on your final project. What have you been working on or thinking about? Did you run into any issues or questions? Did you reach any milestones? Did your project shift direction? (If you don't have progress from the last week, say so to get credit for this problem, but glance nervously at the impending deadline.)

The following problem is optional. Time permitting, we will still provide feedback and solutions to any submissions.

Problem 8.2 [Optional, Collaboration OK].
Consider three distinct points A, B, C on the surface of a convex polyhedron, and imagine the possible shortest paths p from A to B and shortest paths q from A to C. Prove that at least one of the following cases holds:

(a) There's a shortest path p from A to B, and a shortest path q from A to C, that intersect only at A.

(b) For every such pair of shortest paths, p contains q.

(c) For every such pair of shortest paths, q contains p.