CS 2104: Introduction to Problem Solving
Quiz 1. Use any source (lecture notes, Internet) except your neighbor.
Answer without explanation = no points, even if correct.

Q1. 15 points The "Boys and Girls" problem we discussed in class assumed that "each couple continues to have children until a boy is born". Solve the problem, that is find the ratio of boys to girls, using a more realistic assumption: "each couple continues to have children until either a boy is born or until they lose faith and stop after several ($N > 1$) attempts. Each couple may have their own N".

Q2. 15 points You are taken to a secret bunker, and asked if you can solve the following problem in 24 hrs: given a file with names and global positions of every human being on Earth, find a pair that is furthest away from each. Assume that each person's position is given by accurate (x, y, z) coordinates. Your solution must be guaranteed to be correct, regardless of how people are distributed at the moment (e.g. everyone might happen to be in Australia). You only have your laptop with you with a C++ (or Java) compiler. No internet. Start with a "Yes" or "No", then present quantitative, logical arguments.