

*\*Social\*Networks\**

*Home Work #4*

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*Due: 22 November 2016*

Q1. [10 ] In the basic “six degrees of separation” question, one asks whether most pairs of people in the world are connected by a path of at most six edges in the social network, where an edge joins any two people who know each other on a first-name basis.

Now let’s consider a variation on this question. Suppose that we consider the full population of the world, and suppose that from each person in the world we create a directed edge only to their ten closest friends (but not to anyone else they know on a first-name basis). In the resulting “closest-friend” version of the social network, is it possible that for each pair of people in the world, there is a path of at most six edges connecting this pair of people? Explain