EECS 70 Discrete Mathematics and Probability Theory
Fall 2014 Anant Sahai

Discussion 3W-S

1. Anti-Soulmates

1. Create an example where, when the traditional propose-and-reject algorithm is run, all the women end up with their least preferred partner.

2. Prove that, if all the women end up with their least preferred partner in the traditional propose-and-reject algorithm, then all the men end up with their most preferred partner.

2. Universal Preference

Suppose that preferences in a stable marriage instance are universal: all n men share the preferences $W_1 > W_2 > \cdots > W_n$ and all women share the preferences $M_1 > M_2 > \cdots > M_n$.

1. What result do we get from running the algorithm with men proposing? Can you prove it?

2. What result do we get from running the algorithm with women proposing?

3. What does this tell us about the number of stable matchings?