

GALE SHAPLEY Algo.

Algo outline

- (i) Everyone is free
- (ii) Women make some proposals to men
- (iii) End up with n married couples

⑥ Everyone is free

① Pick a free woman w

Q: Who should w propose to?

A: w proposes to her most preferred man m .

Q: What should m do?

Case 1: Says yes (m, w) get engaged

Problem: A more preferred woman w' might try to propose to m

Case 2: Says no

Problem: m might not get another woman!

② General case

→ Some engaged & some free

(Assume: Each woman proposes to each man $\leq$ once)

③ If all n men & n women are
engaged, then all the pairs
are married