

CS105 (DIC on Discrete Structures):  
Problemsheet 12  
Problems on graphs, matchings

1. Re-read and understand the proof of Hall's theorem. See if you can find a link between Hall's theorem and Dilworth's theorem for chains and anti-chains that we saw earlier in this course.

Solve the following questions from Douglas West's book, *Introduction to Graph Theory, 2nd Edition*.

2. Matchings and Maximum matchings: 3.1.1, 3.1.2, 3.1.3, 3.1.11, 3.1.18,
3. Perfect matchings: Exercise 3.1.19, 3.1.22, 3.1.23, 3.1.24.