Homework 5
Combinatorics (Math 446) Fall 2004 Lehigh University

Due Wednesday October 6

The reference to 'Lee' is the handout of chapter 4 from the book on combinatorial optimization by Jon Lee

22. Weighted matching exercise, page 112 in Lee

23. Disjoint odd-set cover problem page 113 in Lee

24. Tutte's perfect matching theorem problem page 114 in Lee

25. Matching duality Theorem problem page 121 in Lee

26. Use the Tutte-Berge formula to give another proof of the matching duality theorem. (This is exercise 6.2.26 in the West course text.) Note in hw 24 you are asked to prove Tutte's theorem from the matching duality theorem. This problem along with hw 27 will do the reverse: hw 27 will give a short proof of the Tutte-Berge formula from Tutte's theorem and hw 26 will prove matching duality from the Tutte-Berge formula.

27. Use Tutte's perfect matching theorem to prove the Tutte-Berge formula. (This is exercise 6.2.12 in the West course text.)