University of Washington February 22, 2000
Department of Computer Science and Engineering
CSE 521, Winter 2000

Homework 8, **Due Wednesday, March 1, 2000**

Problem 1.:

Page 614, Exercise 27.4-3.

Problem 2.:

Page 614, Exercise 27.4-4. (I think they are looking for an $O(mn)$ bound.)

Problem 3. :

Page 625, Problem 27-1.

Problem 4. :

Page 627, Problem 27-4.

Problem 5. Maximum Flow using a small number of edges:

Prove that the problem of finding a maximum flow in a graph which uses as few edges as possible is NP-complete. Formally, the input is a directed graph G with capacities on the edges, and an integer K, and the question is "does there exist a maximum flow f such that at most K edges have $f(e) > 0$?".

Hint: Give a reduction from Vertex Cover.