

Problem Set 8:
Maximum Flow

Due: Thursday, March 13, 2014, at the beginning of class

1. Suppose that you wish to find, among all minimum cuts in a flow network G , one that contains the smallest number of edges crossing the cut. Show how to modify the capacities of G to create a new flow network G' in which any minimum cut in G' is a minimum cut with the smallest number of edges in G . Assume all edge capacities are integers.

2. Work problem 26-5 on pages 762-763 (“Maximum flow by scaling”). [Note that your answers to this problem should be precise, and not “hand-wavy”. That is, even though the terminology of the problem statement doesn’t sound strict (e.g., “argue”, “show”, “conclude”), you should still give technical, precise answers, as you would do for proofs.]