## Discrete Mathematics WS 07/08 <br> Homework 10 (due 01/02)

## Exercise 1:

Use the Ford-Fulkerson Algorithm to find a maximum flow from the source (vertex 1) to the sink (vertex 6) in the following network. Prove that your flow is optimal by exhibiting

a cut with the same capacity.

## Exercise 2:

Given a solution to the max-flow problem, give a linear time algorithm to determine whether this solution does indeed give a miximum flow.

## Exercise 3:

In a more general max-flow problem, there are many sources and sinks, and we wish to maximize the total flow from all sources to all sinks. Show how to reduce the more general problem to the original max-flow problem.

