

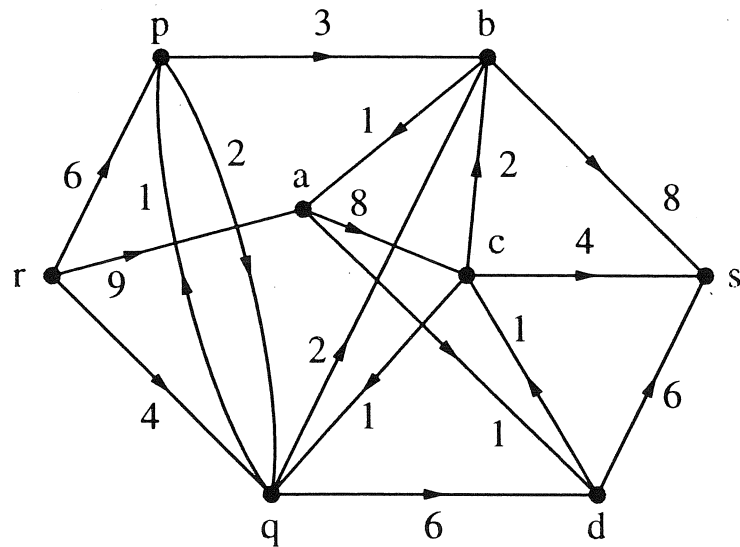


Figure 3.4. Maximum flow exercise

Exercises

- 3.45. Solve the problem of Figure 3.12 using the same rules as in the text, but making the first push on pb .
- 3.46. Find a maximum flow and minimum cut for the problem of Figure 3.4 using the push-relabel algorithm.
- 3.47. Suppose that $u_{rv} = \infty$ for some $rv \in E$. Show how a maximum flow can be constructed from the solution of a maximum flow problem on a smaller digraph.
- 3.48. Prove that, if x is a feasible preflow and there exists a valid labelling for x , then the labelling defined by $d(v) = \min(d_x(v, s), n + d_x(v, r))$ is valid. In what sense is this labelling “best”? How fast can it be computed?