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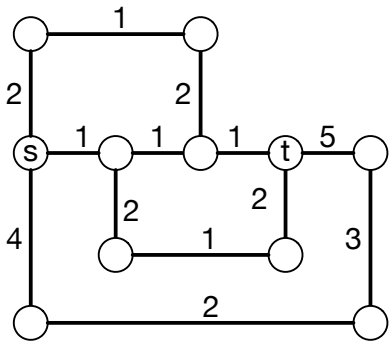
Exercise Sheet No. 3

Energy Informatics

Winter 2016

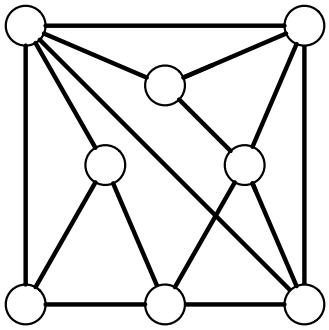
Exercise 4
Consider the following graph.



1. Find the shortest path p between s and t (with respect to the hop distance).
2. Compute the maximum flow on p and find two augmenting paths. What is the resulting flow?
3. Find the minimum cut between s and t and compare the result to the maximum flow.

Exercise 5
k-connectivity

1. Is the following graph 2-connected? Is it 3-connected?



2. Find two nodes such that the maximum flow is equal to the connectivity number. Construct the maximum flow.
3. Is it always possible to find such a pair of nodes?
4. Is the graph 3-edge-connected?