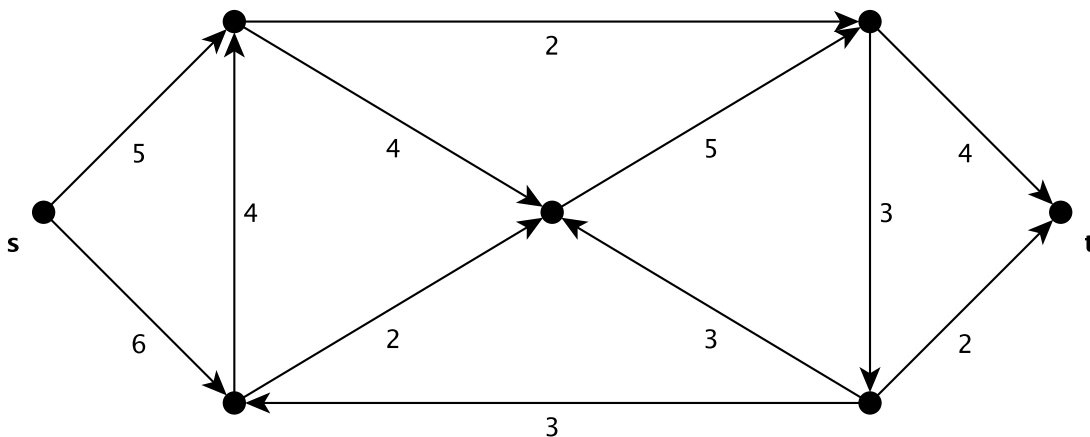


Exercises for the Lecture
Graph Theory
 Winter 2014/15
 Blatt 6 (10 points)

Task 1:

5 points

1. Give a non-empty, non-maximum, permissible (s, t) -flow for the given graph with the capacities noted as edge-weights.



2. Give the residual graph of $G(V, R)$.
3. State the max-flow and its flow-value.
4. State the minimum s - t cut.

Task 2:

5 points

Let $G = (V, R)$ be a simple graph with capacities $c(r) \in \mathbb{N}, r \in R$.
 Prove or disprove the following statements:

- a) If all $c(r)$ are even, a maximum (s, t) -flow has an even value.
- b) If all $c(r)$ are odd, the minimum (s, t) -cut has an odd value.