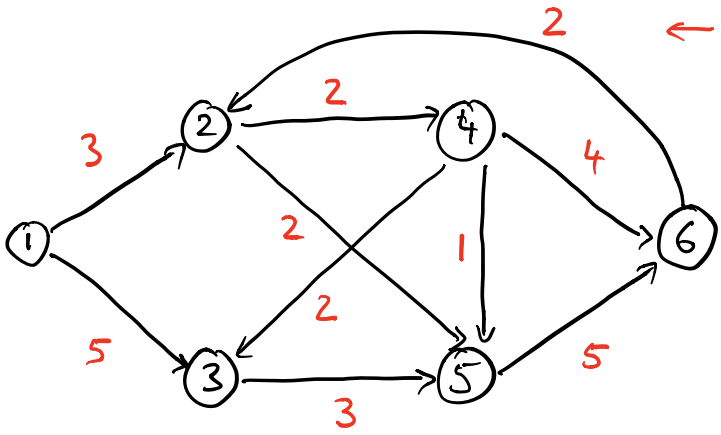
Exercises 1

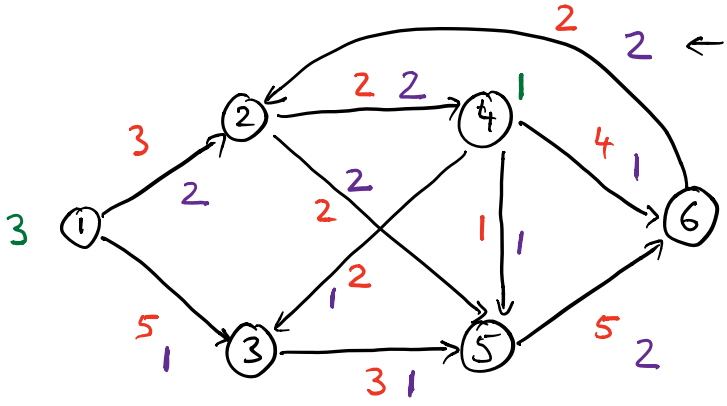
1: Consider the following network



a) Compute a maximum flow from ① to ⑥.

b) Compute a path decomposition of the resulting flow.

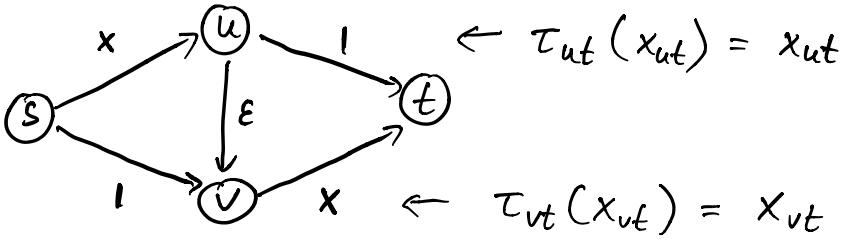
2. Consider the same network with cost c(a) per arc a and balances b(v) per node



So vertex ① sends 3 units of flow, vertex ④ sends 1 unit of flow and vertex ⑥ wants to receive 4 units of flow.

Compute a flow x with minimum cost $\sum_a x_a \cdot c(a)$ that does this (a min-cost b-flow).

3. Compute the system optimum of this network



Demand $d_{st} = 1$