Randomised Algorithms
Winter term 2022/2023, Exercise Sheet No. 4

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Exercise 1.

(a) *Hey*

(b) *Hey*

Exercise 2.

Let $C = \{x_1, \ldots, x_N\}$ be a random cut of the graph, we are obviously interested in $\mathbb{E}[N]$, i.e., the expected number of edges in a cut.
Let $E = \{e_1, \ldots, e_{|E|}\}$ and let the RV X_i be the indicator of edge e_i in C.
Clearly $N = \sum_i^{|E|} X_i$, and hence, $\mathbb{E}N = \sum_i^{|E|} \mathbb{E}X_i$
Now we prove that $\mathbb{E}(X_i) = 1/2$