

Hints

Some hints to exercise 2-4. The fractional solutions might contain more than one violated inequality of each type. So you should not worry if you have found other violated inequalities than the ones hinted here.

Exercise 2: The set S contains two nodes and one of them is node 5.

Exercise 3: The set S contains four nodes and node 12 (pickup of request 5) is one of them.

Exercise 4: A violated inequality with $m = 3$ can be found. One of the subsets in the violated inequality is $\{2,11\}$.