

Let  $T$  be the set of all tutors.

Let  $T_1$  be the set of tutors taking 2 hours of tutorials.

Let  $T_2$  be the set of tutors taking 6 hours of tutorials.

Let  $S$  be the set of all tutorial slots.

Let  $K$  be the set of all time slots.

Let  $S_k$  be the set of all time slots that take place at time  $k$ .

Let  $a_{ij}$  denote that tutor  $i$  is available to take tutorial  $j$ .  $a_{ij}$  is 1 if the tutor is available and  $m$  if the tutor is not available, where  $m$  is a sufficiently large number.

Let  $x_{ij}$  be the decision variable which denotes that tutor  $i$  is taking  $j$ .  $x_{ij}$  is a binary variable.

$$\max \sum_{i \in T, j \in S} x_{ij}$$

subject to

$$\forall i \in T_1 \sum_{j \in S} a_{ij} x_{ij} = 2$$

$$\forall i \in T_2 \sum_{j \in S} a_{ij} x_{ij} = 6$$

$$\forall j \in S \sum_{i \in T} x_{ij} = 2$$

$$\forall i \in T, \forall k \in K \sum_{j \in S_k} x_{ij} \leq 1$$

$$x_{ij} \in \{0, 1\}$$

$$a_{ij} \in \{1, m\}$$