

CIS 2166, Homework for matching in graphs

1. Consider three jobs to be assigned to three machines. The cost for each combination is shown in the matrix C below. Formulate this problem as a linear program so that the minimal assignment can be found by solving this program. You do not need to solve this linear program.

$$C = \begin{pmatrix} 5 & 7 & 9 \\ 14 & 10 & 12 \\ 15 & 13 & 16 \end{pmatrix}$$

2. Determine the job assignment with the minimal cost by simulating basic steps of the Hungarian algorithm. Hint: First subtract the smallest element in each row from the corresponding row. Then subtract the smallest element in each column from the corresponding column. The zero entries identify your solution.