1. Suppose we are to make a schedule for the jobs $J := \{5, 6, 7, 8, 9, 10, 11\}$ on the machines $M := \{1, 2, 3, 4\}$. As in lecture and in section 8.3 of the Gärtner and Matouek book, let LPR(6) be the linear program relaxation of the machine scheduling integer program with the additional condition that if job $j$ takes longer than 6 units to complete on a machine $i$, then job $j$ cannot be scheduled on machine $i$. Suppose that $(t^*, x^*)$ is an optimal basic feasible solution of LPR(6) and $t^* = 8$. Also, suppose that the non-zero entries of $x^*$ are $x^*_{1,5}, x^*_{1,7}, x^*_{1,11}, x^*_{2,5}, x^*_{2,6}, x^*_{2,9}, x^*_{3,10}, x^*_{3,11}, x^*_{4,5}, x^*_{4,8}$. Use the approximate algorithm discussed in class and in section 8.3 of the book to construct an integer schedule with makespan at most 14.