Math 484.1 midterm April 11, 2001 5 problems, 10 pts each
Name

Solve transportation problems:

1.

1	2	3	1	2	3	1	2	3	10
0	3	2	0	1	2	1	2	1	20
2	1	0	1	2	1	2	1	1	12
1	1	1	2	2	2	2	2	1	8
0	0	0	14	1	2	3	14	16	

2.

1	2	3	1	2	3	1	2	3	10
0	3	2	0	1	2	1	2	1	20
2	1	0	1	2	1	2	1	1	12
1	1	1	2	2	2	2	2	1	8
2	3	4	5	1	19	0	0	16	

3.

1	2	3	1	2	3	1	2	3	0
0	3	2	0	1	2	1	2	1	30
2	1	0	1	2	1	2	1	1	12
1	1	1	2	2	2	2	2	1	8
2	3	4	5	1	2	3	14	16	

Solve the assignment problems:

4.

1	2	3	1	2
3	1	2	1	0
0	0	3	2	1
0	0	2	1	1
1	3	3	1	0

5.

1	2	0	1	2
0	1	2	1	0
0	1	0	2	1
2	2	0	1	1
0	0	3	1	2

Answer:

5.

	0	0	0	1	0
0	1 (1)	2 (2)	0 0	1 1	2 (2)
0	0 0	1 (1)	2 (2)	1 (0)	0 1
0	0 1	1 (1)	0 0	2 (1)	1 (1)
0	2 (2)	2 (2)	0 1	1 (0)	1 (1)
0	0 0	0 1	3 (3)	1 (0)	2 (2)

min=1.

By the way, in this case instead of computing $w_{i,j}$ and cheking that they are ≥ 0, we can just check that the nonzero flow at each column is placed at positions with minimal cost.