Part I: Five jobs (j=1,2,3.4.5) are each to be assigned to a job (m=1,2,3,4,5). The cost C_{jm} of assigning job j to machine m is shown in the table:

j\m	1	2	3	4	5
1	10	16	13	16	15
2	21	10	11	12	24
3	11	23	11	19	12
4	11	24	12	23	21
5	14	22	25	23	25

Perform the row and column reductions below and verify that the resulting cost matrix is non-negative and that a zero-cost assignment can be found.

Row reduction by

i	1	2	3	4	5
U_i	4	0	1	3	8

Column reduction by

j	1	2	3	4	5
V_j	6	10	9	12	11

Resulting cost matrix:

	1	2	3	4	5
1					
2					
3					
4					
5					

Optimal assignment:

Job	Machine
1	
2	
3	
4	
5	

* * * * * * * * * *

Part II: *Another Cost Matrix*

	1	2	3	4	5
1	10	14	24	23	10
2	16	11	19	22	19
3	23	25	16	16	16
4	21	22	22	19	18
5	20	25	23	11	17

	1	2	3	4	5
1					
2					
3					
4					
5					

↓

	1	2	3	4	5
1					
2					
3					
4					
5					

Perform the sequence of reductions until a nonnegative cost matrix with a zero-cost assignment has been found.

	1	2	3	4	5
1					
2					
3					
4					
5					

Optimal assignment

Job	Machine
1	
2	
3	
4	
5	

* * * * * * * * * *

Part III: *Another Cost Matrix*

	1	2	3	4	5
1	14	7	9	7	9
2	2	4	5	15	12
3	10	8	9	12	4
4	16	2	10	4	2
5	3	1	7	5	13

	1	2	3	4	5
1					
2					
3					
4					
5					

↓

	1	2	3	4	5
1					
2					
3					
4					
5					

Perform the sequence of reductions until a nonnegative cost matrix with a zero-cost assignment has been found.

	1	2	3	4	5
1					
2					
3					
4					
5					

Optimal assignment:

Job	Machine
1	
2	
3	
4	
5	