**HW 4**

1. A manager will assign 5 jobs to 5 machines. The cost of finishing a job by machines is given in the table below.

| Job | Machines | | | | |
|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 |
| A | 85$ | 70 | 60 | 10 | 40 |
| B | 6 | 15 | 90 | 76 | 50 |
| C | 50 | 80 | 5 | 75 | 15 |
| D | 75 | 84 | 82 | 25 | 30 |
| E | 20 | 24 | 30 | 14 | 35 |

Make an assignment for the minimum total cost. (use Python or Excel Solver)

2. A company has two plans located in Istanbul, one of them is in the European side and the other is in the Anatolian side of Istanbul. Company delivers the product to markets via two warehouses. Table below shows the capacities of the plants and the warehouses and the demands of markets. According to the table given find the minimum shipping cost and routes.

| supply | Plants: Istanbul | | warehouse | capacity | Markets | demand |
|---|---|---|---|---|---|---|
| | | | | | Kayseri | 1250 |
| 5000 (box) | Anatolian side | | Ankara | 4500 | Sivas | 3000 |
| | | | | | Mersin | 4200 |
| 7500 | European side | | Adana | 8000 | Niğde | 2800 |
| | | | | | Erzurum | 1000 |

Shipping costs (TL, per box)

| | Ankara | Adana | | Kayseri | Sivas | Mersin | Niğde | Erzurum |
|---|---|---|---|---|---|---|---|---|
| Anatolian side | 1 | 3 | Ankara | 2 | 2 | 4 | 3 | 4 |
| European side | 2 | 3 | Adana | 3 | 4 | 1 | 1 | 1 |