1. Four building companies have presented their projects to a competition called to build buildings A, B, C and D. Each builder must be assigned the construction of a building. The following tableau shows the time each building company needs to build each of the buildings. The objective is to assign the construction of a building to each building company so that the total building time is minimized.

|  | 1 | 2 | 3 | 4 |
| :--- | :--- | :--- | :--- | :--- |
| A | 58 | 58 | 60 | 54 |
| B | 66 | 70 | 70 | 78 |
| C | 106 | 104 | 100 | 95 |
| D | 52 | 54 | 64 | 54 |

2. A company has 4 machines available for assignment to 4 tasks. Any machine can be assigned to any task, and each task requires processing by one machine. The time required to set up each machine for the processing of each task is given in the table below.
TIME (Hours)

|  | Task 1 | Task 2 | Task 3 | Task 4 |
| :--- | :---: | :---: | :---: | :---: |
| Machine 1 | 13 | 4 | 7 | 6 |
| Machine 2 | 1 | 11 | 5 | 4 |
| Machine 3 | 6 | 7 | 2 | 8 |
| Machine 4 | 1 | 3 | 5 | 9 |

The company wants to minimize the total setup time needed for the processing of all four tasks.

