PROBLEM F: COMMUTING

Input file: standard input

Output file: standard output

Problem

Imagine that you are the boss of a big company. You have N factories (N ≤ 100) widely distributed around the country. Each factory has its own manager. Unfortunately your managers live in towns different than those where they work and they have to commute. You agreed to refund their travel costs. To save money you decided to re-assign N managers to N factories in such a way the total amount of refunding is minimal. You asked your secretary to prepare a table showing for every manager M and a factory F amount of money necessary to cover travel costs from the place where M lives to the place where factory F is situated. Write a program that solves the problem.

Input

- N - number of managers that is equal to the number of factories (in a separate line)
- a sequence of N lines, each containing N natural numbers - an F-th number appearing on the line M describes travel costs from the place where manager M lives to the place where factory F is located.

Remark

Remember that one manager can work only in one factory and every factory needs a manager.

Output

A number describing minimal total amount of money necessary to cover travel costs for all the managers. That number is to be followed by one new line character.

Example

Input file

```
4
2  10   9   7
15   4  14   8
13  14  16  11
4   15  13   9
```

Output file

```
28
```