

Travelling SalesPerson

Given a matrix M of size N where $M[i][j]$ denotes the cost of moving from city i to city j. Your task is to complete a tour from the city 0 (0 based index) to all other cities such that you visit each city atmost once and then at the end come back to city 0 in min cost.

Example: Input: 2 2 0 111 112 0 3 0 1000 5000 5000 0 1000 1000 5000 0 Output: 223 3000

Input Format

Input: The first line of input contains an integer T denoting the no of test cases. Then T test cases follow. Each test case contains an integer N denoting the size of the matrix then in the next line are N*N space separated values of the matrix M.

Constraints

Constraints: $1 \leq T \leq 15$ $1 \leq N \leq 12$ $1 \leq M[i][j] \leq 10000$

Output Format

Output: For each test case print the required result denoting the min cost of the tour in a new line.

Sample Input 0

```
2
2
0 111
112 0
3
0 1000 5000
5000 0 1000
1000 5000 0
```

Sample Output 0

```
223
3000
```