
Maximum cost of a path (2)

P70102_en

Examen parcial d'Algorísmia, FME (2011-10-27)

Given a directed and complete graph with n vertices, compute the maximum cost of all the paths with the vertices in increasing order. The given graph is represented by an $n \times n$ matrix M , where for every pair (i, j) with $i \neq j$, m_{ij} is the (perhaps negative) cost of the arc from i to j .

For instance, the maximum cost of the first test is 100, because of the path $0 \rightarrow 1 \rightarrow 3 \rightarrow 4$, with cost $20 - 10 + 90 = 100$.

Input

Input consists of the number of vertices n , followed by the matrix M (n lines, each one with n integer numbers), followed by the initial vertex x . Vertices are numbered from 0 to $n - 1$. You can assume $1 \leq n \leq 10^3$, that the diagonal has only zeros, and that the rest of numbers are between -10^6 and 10^6 .

Output

Print the maximum cost of all the paths with the vertices in increasing order.

Sample input 1

```
6
0 20 5 -3 80 -2
11 0 30 -10 -12 3
22 -10 0 -50 15 -5
23 -60 35 0 90 7
97 14 -70 -11 0 -11
1 2 3 4 5 0
```

Sample output 1

```
100
```

Sample input 2

```
1
0
```

Sample output 2

```
0
```

Sample input 3

```
3
0 -6 8
-4 0 9
-7 -2 0
```

Sample output 3

```
9
```

Problem information

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