Cheapest cycle P18546_en

You are given an undirected graph with positive costs at the edges. Please compute the cheapest cycle of the graph.

Input

Input consists of several cases, each with the number of vertices n, followed by the number of edges m, followed by m triples x y c to indicate an edge connecting x and y with cost c, where $x \neq y$ and $1 \leq c \leq 10^6$. Vertices are numbered starting from 0. For every pair of vertices, there is at most one edge connecting them. Assume $3 \leq n \leq 1000$ and $n \leq m \leq 5n$.

Output

For every case, print the cost of the cheapest cycle of the graph.

Sample input 1

```
3 3
0 1 10  0 2 20  1 2  30
7 8
5 0 70  4 5 10  0 4 40  2 1 40  3 6 1  5 2 30  4 1 30  4 2 80
```

Sample output 1

```
60
110
```

Problem information

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