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## Cheapest cycle

P18546\_en

Catorzè Concurs de Programació de la UPC - Semifinal (2016-06-29)

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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

```
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

```
60
110
```

### Problem information

Author : Salvador Roura  
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