

Maximum Flow

Given a graph with n ($2 \leq n \leq 50$) vertices numbered 1 to n and m ($1 \leq m \leq 1000$) directed, weighted edges, compute the [maximum flow](#) from vertex 1 to vertex n .

Input

The first line contains the two integers n and m . The next m lines each contain three integers u , v , and c , denoting that there is an edge (u,v) of capacity c , where $1 \leq c \leq 1000$ and $1 \leq u, v \leq n$.

Output

Output the value of the maximum flow from 1 to n .

Example

Input:

```
4 5
1 2 3
1 3 4
2 4 4
3 2 1
3 4 2
```

Output: 6