# Travelling Sales Person

Time Limit: 2 Second
Memory Limit: 256 MB

A sales person is planning to visit $n$ cities that are connected by bidirectional roads. Design a travel route for the person so that the total distance is minimized.

## Input

The first line of input contains two integer $n$ and $m$ ($1 \leq n \leq 20$, $n-1 \leq m \leq \frac{n(n-1)}{2}$) - the number of cities and the number of roads.

The next $m$ lines describe the roads. Each line contains three integers $u$, $v$, and $d$ ($1 \leq u, v \leq n$, $1 \leq d \leq 100$), denoting an undirected road between city $u$ and city $v$ with distance $d$. It is guaranteed that the cities are connected, and there are no self-loops or multiple edges.

## Output

Output a single integer denoting minimum distance needed to visit all cities at least once.

## Sample Inputs

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

## Sample Outputs

```
10
```