# Problem 3. Shortest cycle (2 points, Timelimit: 4sec)

## Problem Statement

For given a **undirected weighted graph** $G = (V, E)$, find a shortest cycle with in the graph.
The cycle should contains at least three disjoint edges.

## Input Statement

First line contains $t$ which is the number of test cases.
At the first line of each test case contains the size of graph $|V|(3 \leq V \leq 1,000)$ and $|E|(3 \leq E \leq 1,000)$.
Each of next $|E|$ lines contains three integers $u$, $v$ and $d$ that represents an edge $(u, v)$ with distance $d$. All the edges are disjoint to each other.

## Output Statement

For each test case, print the length of shortest cycle in the given graph. If there is no available cycle, print -1 instead of the length.

## Input Example

```
2
3 3
0 1 5
1 2 3
0 2 2
5 6
0 1 5
1 2 2
1 3 1
3 2 7
2 4 2
4 1 15
```

## Output Example

10 // $0 \to 1 \to 2 \to 0$, $5 + 3 + 2 = 10$
10 // $1 \to 2 \to 3 \to 1$, $2 + 7 + 1 = 10$

## Hint

Consider the limit of $|V|$ and $|E|$ carefully.