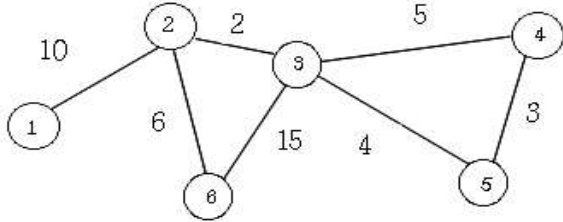


# KOICOST - Cost

You are given an undirected graph with  $N$  vertices and  $M$  edges, where the weights are unique.

There is a function  $\text{Cost}(u, v)$ , which is defined as follows:

While there is a path between vertex  $u$  and  $v$ , delete the edge with the smallest weight.  $\text{Cost}(u, v)$  is the sum of the weights of the edges that were deleted in this process.



For example, from the graph above (same as the sample input),  $\text{Cost}(2,6)$  is  $2+3+4+5+6 = 20$ .

Given an undirected graph, your task is to calculate the sum of  $\text{Cost}(u, v)$  for all vertices  $u$  and  $v$ , where  $u < v$ . Since the answer can get large, output the answer modulo  $10^9$ .

## Input

The first line of the input consists of two integers,  $N$  and  $M$ . ( $1 \leq N \leq 100,000$ ,  $0 \leq M \leq 100,000$ )

The next  $M$  lines consists of three integers,  $u$ ,  $v$ , and  $w$ . This means that there is an edge between vertex  $u$  and  $v$  with weight  $w$ . ( $1 \leq u, v \leq N$ ,  $1 \leq w \leq 100,000$ )

## Output

Output the sum specified in the problem statement.

## Example

### Input:

```
6 7
1 2 10
2 3 2
4 3 5
6 3 15
3 5 4
4 5 3
2 6 6
```

### Output:

```
256
```