

## E. Minimum spanning tree for each edge

time limit per test: 2 seconds

memory limit per test: 256 megabytes

input: standard input

output: standard output

Connected undirected weighted graph without self-loops and multiple edges is given. Graph contains  $n$  vertices and  $m$  edges.

For each edge  $(u, v)$  find the minimal possible weight of the spanning tree that contains the edge  $(u, v)$ .

The weight of the spanning tree is the sum of weights of all edges included in spanning tree.

### Input

First line contains two integers  $n$  and  $m$  ( $1 \leq n \leq 2 \cdot 10^5$ ,  $n - 1 \leq m \leq 2 \cdot 10^5$ ) — the number of vertices and edges in graph.

Each of the next  $m$  lines contains three integers  $u_i, v_i, w_i$  ( $1 \leq u_i, v_i \leq n$ ,  $u_i \neq v_i$ ,  $1 \leq w_i \leq 10^9$ ) — the endpoints of the  $i$ -th edge and its weight.

### Output

Print  $m$  lines.  $i$ -th line should contain the minimal possible weight of the spanning tree that contains  $i$ -th edge.

The edges are numbered from 1 to  $m$  in order of their appearing in input.

### Examples

input
5 7 1 2 3 1 3 1 1 4 5 2 3 2 2 5 3 3 4 2 4 5 4
output
9 8 11 8 8 8 9