Changing MST

Time : 1 (*10 testcases) s.

In Undirected Graph without multiple edges or self loop. Find sum of weight in edges obtained from MST (Minimum Spanning Tree) Algorithm. To make this harder, let find this answer at every time we add new edges.

Input

First line : T $(T \leq 10)$ denote number of testcase.

First line of each case : N, M $\left(2 \leq N \leq 50000\ ,\ 1 \leq M \leq \min(100000, \frac{(N-1)(N)}{2}\right)$ Separate by space

Next M lines : Integer a, b, l $(1 \leq a, b \leq N\ , 1 \leq l \leq 1000)$ per line represent edges between a and b with weight l. Your result must be MST after adding each of these edges.

Output

M lines with one integer per line representing answer to the question after adding each edge.

Input	Output
1 4 6 1 2 100 2 3 100 3 4 100 4 1 1 1 3 1 3 2 10	-1 -1 300 201 102 12
1 5 10 1 2 4 2 3 3 3 1 3 5 2 4 4 1 5 3 5 1 1 5 10 2 4 2 4 5 3 4 3 2	-1 -1 -1 -1 15 12 12 9 9 8