4080 - Warfare And Logistics

Asia - Changchun - 2007/2008

The army of United Nations launched a new wave of air strikes on terrorist forces. The objective of the mission is to reduce enemy's logistical mobility. Each air strike will destroy a path and therefore increase the shipping cost of the shortest path between two enemy locations. The maximal damage is always desirable.

Let's assume that there are n enemy locations connected by m bidirectional paths, each with specific shipping cost. Enemy's total shipping cost is given as $c = \sum_{i=1}^{n} \sum_{j=1}^{n} path(i, j)$. Here $path(i, j)$ is the shortest path between locations i and j . In case i and j are not connected, $path(i, j) = L$. Each air strike can only destroy one path. The total shipping cost after the strike is noted as c' . In order to maximized the damage to the enemy, UN's air force try to find the maximal $c' - c$.

Input

The first line ofeach input case consists ofthree integers: n , m , and L . $1 < n \leq 100$, $1 \leq m \leq 1000$, $1 \leq L \leq 10 \wedge 8$. Each ofthe following m lines contains three integers: a , b , s , indicating length of the path between a and b .

Output

For each case, output the total shipping cost before the air strike and the maximal total shipping cost after the strike. Output them in one line separated by a space.

Sample Input

```
4  6  1000
1  3  2
1  4  4
2  1  3
2  3  3
3  4  1
4  2  2
```

Sample Output

```
28  38
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