bidirectional roads built between some cities so that any two cities are allowed to travel to each other through the roads. Some roads are lack of maintenance and vehicles break easily on these roads. The brokenness of each road is measured by a non-negative integer. The development of the cities also varies. A city is lowly developed if there is only one road connecting to it.

There is a central factory in city 1 that produces everything the island need. Every day, cargo are shipped from city 1 to all cities with trucks. If the sum of brokenness along the roads from city 1 to another city is too high, the trucks may need to stop for repair in the city. However if the city happens to be a lowly developed city, the truck may be trapped in it since there is no repair shop!

Given the cities and the roads in the island. For each lowly developed city, please output the sum of brokenness along the road from the central factory in city 1.

Input

The first line contains an integer n, being the number of cities.

The following $n-1$ lines describes the roads. Each line contains three integers u, v, b, denoting that city u and city v are connected with a bidirectional road with brokenness b.

Constraints

- $1 \leq n \leq 10^6$
- $0 \leq b \leq 10^9$ for each road

Output

For each lowly developed cities, please output the answer in one line following the format: `City x: b`.

`x` is the number of the lowly developed city. `b` is the brokenness sum.

If there are multiple lowly developed cities, please output the city with smaller number first.

See sample output for details.

Sample Input 1

```
8
1 2 3
4 5 6
7 8 9
1 4 8
1 7 6
```

Sample Output 1

```
City 2: 3
City 3: 6
City 5: 14
City 8: 15
```

Submissions

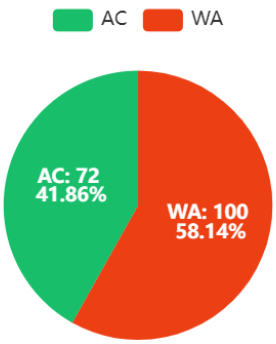
Rankings

View Contest

Information

ID	2
Time Limit	3000MS
Memory Limit	256MB
IO Mode	Standard IO
Created By	ta_redleaf
Level	Hidden
Score	100
Tags	Show

Statistic Details

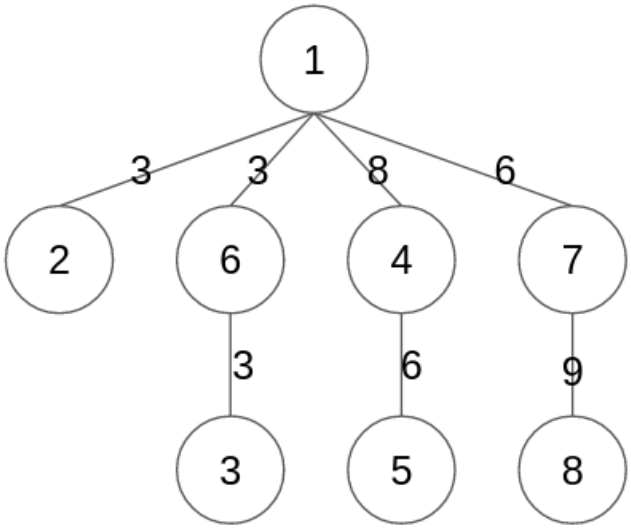


```
2
1 2 3
```

```
City 1: 0
City 2: 3
```

Hint

The island in the sample IO 1 is shown in the following figure:



City $2, 3, 5, 8$ are lowly developed cities. Brokenness sum from city 1 to each of them will be $3, 6, 14, 15$, respectively.

Note that the city 1 may be a lowly developed city as well. Since no roads are needed to travel from city 1 to itself, the brokenness sum will be 0.

Language: C Theme: Solarized Light

```
1
```

Sample Test Input

```
8
1 2 3
4 5 6
7 8 9
1 4 8
1 7 6
1 6 3
6 3 3
```

Sample Test Output