Sending email

There are n SMTP servers connected by network cables. Each of the m cables connects two computers and has a certain latency measured in milliseconds required to send an email message. What is the shortest time required to send a message from server S to server T along a sequence of cables? Assume that there is no delay incurred at any of the servers.

Input and Output

The first line of input gives the number of cases, N. N test cases follow. Each one starts with a line containing n ($2 \leq n < 20000$), m ($0 \leq m < 50000$), S ($0 \leq S < n$) and T ($0 \leq T < n$). $S \neq T$. The next m lines will each contain 3 integers: 2 different servers (in the range $[0, n-1]$) that are connected by a bidirectional cable and the latency, w, along this cable ($0 \leq w \leq 10000$).

Sample Input

```
3
2 1 0 1
0 1 100
3 3 2 0
0 1 100
0 2 200
1 2 50
2 0 0 1
```

Sample Output

```
Case #1: 100
Case #2: 150
Case #3: unreachable
```