"A new internet watchdog is creating a stir in Springfield. Mr. X, if that is his real name, has come up with a sensational scoop." Kent Brockman

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

The first line of input gives the number of cases, $N . N$ test cases follow. Each one starts with a line containing $n(2 \leq n \leq 20000)$, $m(0 \leq m \leq 50000)$, $S(0 \leq S<n)$ 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 ( $0 \leq w \leq 10000$ ).

## Output

For each test case, output the line 'Case \# $x$ :' followed by the number of milliseconds required to send a message from $S$ to $T$. Print 'unreachable' if there is no route from $S$ to $T$.

## Sample Input

2101
01100
3320
01100
02200
1250
2001

## Sample Output

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

