

## Problem G

### Travel in time

#### Description

Bob gets tired of playing games, leaves Alice, and travels to Changsha alone. Yuelu Mountain, Orange Island, Window of the World, the Provincial Museum etc...are scenic spots Bob wants to visit. However, his time is very limited, he can't visit them all.

Assuming that there are  $N$  scenic spots in Changsha, Bob defines a satisfaction value  $S_i$  to each spot. If he visits this spot, his total satisfaction value will plus  $S_i$ . Bob hopes that within the limited time  $T$ , he can start at spot  $S$ , visit some spots selectively, and finally stop at spot  $E$ , so that the total satisfaction value can be as large as possible. It's obvious that visiting the spot will also cost some time, suppose that it takes  $C_i$  units of time to visit spot  $i$  ( $0 \leq i < N$ ).

Always remember, Bob can choose to pass by a spot without visiting it (including  $S$  and  $E$ ), maybe he just want to walk shorter distance for saving time.

Bob also has a special need which is that he will only visit the spot whose satisfaction value is **strictly** larger than that of which he visited last time. For example, if he has visited a spot whose satisfaction value is 50, he would only visit spot whose satisfaction value is 51 or more then. The paths between the spots are bi-directional, of course.

#### Input

The first line is an integer  $W$ , which is the number of testing cases, and the  $W$  sets of data are following.

The first line of each test data contains five integers:  $N M T S E$ .  $N$  represents the number of spots,  $1 < N < 100$ ;  $M$  represents the number of paths,  $0 < M < 1000$ ;  $T$  represents the time limitation,  $0 < T \leq 300$ ;  $S$  means the spot Bob starts from.  $E$  indicates the end spot. ( $0 \leq S, E < N$ )

The second line of the test data contains  $N$  integers  $C_i$  ( $0 \leq C_i \leq T$ ), which means the cost of time if Bob visits the spot  $i$ .

The third line also has  $N$  integers, which means the satisfaction value  $S_i$  that can be obtained by visiting the spot  $i$  ( $0 \leq S_i < 100$ ).

The next  $M$  lines, each line contains three integers  $u v L$ , means there is a bi-directional path between spot  $u$  and  $v$  and it takes  $L$  units of time to walk from  $u$  to  $v$  or from  $v$  to  $u$ . ( $0 \leq u, v < N, 0 \leq L \leq T$ )

## Output

Output case number in the first line (formatted as the sample output).

The second line contains an integer, which is the greatest satisfaction value.

If Bob can't reach spot  $E$  in  $T$  units of time, you should output just a "0" (without quotation marks).

## Sample Input

```
1
4 4 22 0 3
1 1 1 1
5 7 9 12
0 1 10
1 3 10
0 2 10
2 3 10
```

## Sample Output

```
Case #1:
21
```