IOI Training Camp 2014 – Test 1, 1 May, 2014

Problem 2 Feeding Minions

Gru is preparing to steal the moon, but his minions are still sad from the previous failed attempt. In order to cheer them up, he has brought their favorite potatoes.

The minions are standing in a line, numbered 1 to n, from left to right. Gru has exactly n potatoes, and he has to feed each minion exactly once. The minions are as usual competitive, and as a result, each minion's joy at getting the potato depends on whether or not his neighbours have gotten the potato before him. In particular, for the ith minion, if none of his neighbours has gotten the potato before him, his joy is a_i. If exactly one of the neighbours has been fed, his joy is b_i. If both the neighbours have been fed, then i's joy is c_i.

The total joy is defined as the sum of joys of the n minions. The total joy depends on the order in which Gru feeds them. Find the maximum possible total joy.

There are t such test cases.

Note: The c_i values of the first and last minion are irrelevant, because they have only 1 neighbour each.

Input format

- The first line contains t, the number of test cases. t test cases follow, as described below.
- For each test case, the first line contains n, the number of minions. The next n lines contain a_i, b_i, c_i separated by spaces.

Output format

A single integer, the total joy that Gru can achieve.

Test data

There is only one subtask, worth 100 marks.

- $1 \leq t \leq 50$
- $1 \leq n \leq 1000$
- $0 \leq a_i, b_i, c_i \leq 10^5$, integers.

Sample input 1

```
1
4
1 4 0
2 3 1
3 2 1
4 1 0
```

Sample output 1

```
13
```

Sample input 2

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

Sample output 2

```
44
4
```

Limits

- *Memory limit* : 256 MB
- *Time limit* : 2s