

Problem I. Ada and Kohlrabi

Time limit	4000 ms
Mem limit	1572864 kB
Code length Limit	50000 B
OS	Linux

As you might already know, Ada the Ladybug is a farmer. She has a garden with kohlrabi. Each kohlrabi has assigned a quality, which is a number (possibly negative, since the kohlrabi might be rotten).

Ada wants to gather some kohlrabi so she wants to pick a line such that the sum of kohlrabi on the line is maximal. Can you help her to find such line?

Input

The first line of input contains $1 \leq T \leq 100$, the number of test-cases (anyway note that for biggest test-cases there will be only 1 test-case).

The first line of each test-case contains $0 < N \leq 3000$, the number of kohlrabi.

The next N lines contains three integers x, y, q : $-10^9 \leq x, y \leq 10^9$, $-10^4 \leq q \leq 10^4$, the coordinates of kohlrabi and its quality (note that no two kohlrabi will grow on same coordinates).

Output

For each test-case, print the best achievable sum of qualities of kohlrabies on a single line.

Example

Input	Output
5 4 0 0 1 1 1 1 2 2 1 3 3 1 5 0 0 -10 1 0 2 0 1 3 -1 0 2 0 -1 3 3 0 0 -1 1 1 -2 1 3 -5 2 0 0 666 1 7 -666 5 0 0 1 99999999 0 6 0 99999999 5 -99999999 0 6 0 -99999999 5	4 5 0 666 13

Example Input 2

1
7
10 8 -2
9 4 -1
-3 -5 -5
7 5 1
-3 2 -6
5 10 -4
9 7 10

Example Output 2

10

Example Input 3

1
4
-6 0 9
7 4 7
7 -6 -10
-6 7 10

Example Output 3

19

Example Input 4

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1
6
-10 -1 -10
8 3 4
0 9 -2
4 -6 1
6 0 10
-6 1 -10
```

Example Output 4

14