6938 Outer space invaders

The aliens from outer space have (finally!) invaded Earth. Defend yourself, or be disintegrated! Or assimilated. Or eaten. We are not yet sure.

The aliens follow a known attack pattern. There are n attackers, the i-th one appears at time a_i, at distance d_i from you. He must be destroyed no later than at time b_i, or else he will fire his weapon, which will definitely end the fight.

Your weapon is an area-blaster, which can be set to any given power. If fired with power R, it momentarily destroys all aliens at distance R or smaller. It also consumes R fuel cells.

Determine the minimal cost (measured in fuel cells) of destroying all the aliens, without being killed.

Input

The first line of input contains the number of test cases T. The descriptions of the test cases follow:

Each test case starts with a line containing the number of aliens n ($1 \leq n \leq 300$). Of the next n lines, the i-th one contains three integers a_i, b_i, d_i ($1 \leq a_i < b_i \leq 10000$; $1 \leq d_i \leq 10000$). The i-th alien appears at time a_i, is idle until b_i, and his distance from you is d_i.

Output

For each test case, output one line containing the minimum number of cells needed to destroy all the aliens.

Sample Input

```
1
3
1 4 4
4 7 5
3 4 7
```

Sample Output

```
7
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