

Problem A. Divide and conquer

Input file: `divide.in`
Output file: `divide.out`
Time limit: 1 second
Memory limit: 256 megabytes

Mansur plays the new computer strategic game. The main task in such games is mining resources. Fortunately in this game only one resource is necessary for development — the gold, and also there is one supplementary resource type — energy.

In this game there are mining camps, which provide certain amount of gold and energy. All camps are located along the straight line. To protect the mining camps one can build a forcefield (a closed line segment containing mining camps), which needs energy amount equal to it's length.

Mansur wants to build one forcefield in such way, that energy of protected mining camps is enough for the forcefield, and amount of gold provided by these mining camps is maximal possible.

Write a program to help Mansur find the maximal amount of gold which he can obtain from protected mining camps.

Input

First line of the input file contains one integer N — number of mining camps. Following N lines contain three space separated integers x_i, g_i, d_i , $0 \leq x_i \leq 10^9$, $1 \leq g_i \leq 10^9$, $1 \leq d_i \leq 10^9$: mine coordinates, amount of gold and energy provided by the mine. All x_i are different and given in increasing order.

Output

Output only one number — maximal amount of gold which Mansur can mine.

Examples

<code>divide.in</code>	<code>divide.out</code>
4 0 5 1 1 7 2 4 4 1 7 15 1	16
2 0 4 1 3 5 1	5
4 0 1 5 5 1 1 7 1 5 13 1 1	3
4 0 1 5 5 1 1 7 1 5 12 1 1	4

Note

This task has 3 subtasks. Only full solution of a subtask will be counted.

Subtask 1. (17 points) $1 \leq |s| \leq 100$.

Subtask 2. (31 points) $1 \leq |s| \leq 5000$.

Subtask 3. (52 points) $1 \leq |s| \leq 100000$.