#### **Problem F: Boom**

Time Limit: 1 Sec Memory Limit: 128 MB Submit: 0 Solved: 0

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### **Description**

Yuki is a grumpy girl and she always wants to make some noise.

One day, Yuki goes to the amusement ground in her university and sets n bombs. The i-th bomb set at the position  $(x_i, y_i)$  has exploding radius  $r_i$  and lighting-cost  $t_i$ , which means that Yuki needs to spend  $t_i$  seconds to config the bomb and make it exploded by remote control.

A bomb will explode **instantly** if it is in the exploding area (**including** the boundaries) of any other exploded bombs.

Yuki wants to know the **minimum** time needed to make all the bombs exploded, and could you give her the answer?

#### Input

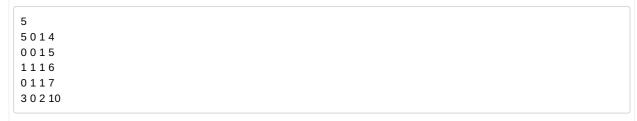
The first line contains an integer n ( $1 \le n \le 1000$ ) --- the number of bombs.

In the following n lines, the i-th line contains four integers:  $x_i$ ,  $y_i$ ,  $r_i$  and  $t_i$   $(-10^8 \le x_i, y_i \le 10^8, 0 \le r_i, t_i \le 10\ 000)$  --- parameters of the bomb.

### **Output**

Print one line with the result --- the minimum time cost.

## **Sample Input**



# **Sample Output**

15

#### **HINT**

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