

Cats

Time limit: 6.0s

Memory Limit: 32MB

Jon hates cats very, very much. In fact, he hates them so much that one night, before he fell asleep, he was thinking about his terrible encounter with his friend's cat during a party, that he had a nightmare about, well, you guessed it, cats. In this nightmare, Jon is stuck in an alternate dimension with many, many cats. To make it worse, he is put in a situation in which he had to face cats wherever he went, until he escapes this alternate dimension, as he can only travel between enclosed rooms, all containing only a portal and cats. In this alternate dimension, there are $N+1$ rooms, numbered 0 to N . Jon starts out in room 0. In each room i , there are C_i many cats. The room i can be reached by travelling from the portal in rooms numbered with an integer greater than or equal to $i - P_i$. The portal in room N is the only way Jon can leave this terrible dimension. Jon somehow knows the value of C_i and P_i for each room i , help Jon find out what the minimum number of cats he can encounter is before he escapes from this terrible nightmare of an alternate dimension.

Input

Line 1 contains an integer N .

The following $N+1$ lines contain 2 integers, C_i and P_i .

Note: i starts from 0.

Output

Output a single integer in a line being the minimum number of cats Jon can encounter before he escapes.

Limits

Subtask 1 (15%): $1 \leq N \leq 1000$, $2 \leq C_i \leq 10^9$, $1 \leq P_i \leq N$

Subtask 2 (20%): $1 \leq N \leq 1000000$, $C_i = 2$, $1 \leq P_i \leq N$

Subtask 3 (65%): $1 \leq N \leq 1000000$, $2 \leq C_i \leq 10^9$, $1 \leq P_i \leq N$