B Bitcoin Bubble

Time limit: 2s

Cryptocurrencies

These days, all eyes and money are on crypto. The stakes are high and a team of experts, which call themselves the FPC (Fabulous People of Crypto) are on the verge of a big move. They call their move "The Bubble".

The Bubble will work as follows: one day, the FPC will release a set of classified information that will shake the market to its roots. That day, call it x, will be the epicenter of their move. To measure the impact of The Bubble, consider the longest sequence of consecutive days, starting on day a and ending on day b ($a \leq x \leq b$), for which Bitcoin's price is never lower than its price on day x. The impact is measured as the length of this sequence in days multiplied by the price of Bitcoin on day x. The starting day and the end day of The Bubble's impact should be within the boundaries of the period the FPC know the price for.

There is only one catch: despite anticipating Bitcoin's price for the foreseeable future, the FPC lack the most fabulous skill in the world: programming. Help them measure the biggest possible impact of The Bubble, given that they release the shocking information on an optimal day.

Input

The input consists of:

- A line with a single integer n ($1 \leq n \leq 5 \cdot 10^4$), the number of price anticipations for Bitcoin.
- n lines, each containing two integers p and d ($0 \leq p \leq 2 \cdot 10^9$ and $1 \leq d \leq 5 \cdot 10^4$), representing the price and the number of days the price lasts for.

Price information is given in chronological order.

Output

Output a single number, the biggest impact The Bubble can have.

Sample Input 1	Sample Output 1
4 3 2 9 4 5 2 7 4	50

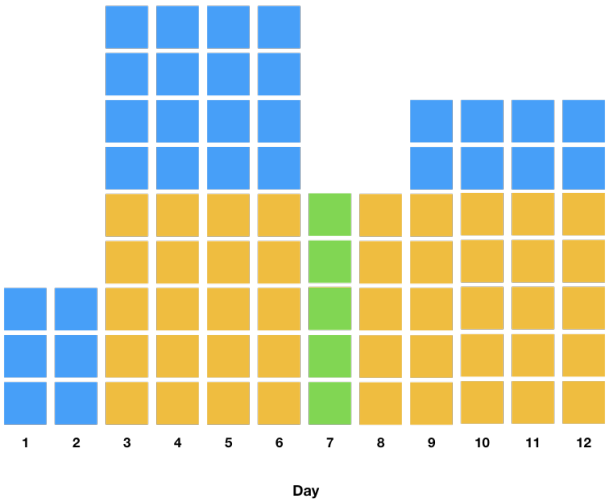

Figure B.1: A visualisation of the first sample input. The orange rectangle indicates the maximum impact of The Bubble. Day 7 (marked in green) is the epicenter of The Bubble.

Sample Input 2	**Sample Output 2**
10 5 5 8 1 8 3 9 1 0 6 1 6 1 5 6 2 6 5 9 6	78