Problem S. Play Snuke

Time limit   2000 ms
Mem limit   1048576 kB

Problem Statement

Takahashi wants to buy the popular video game console called Play Snuke.

There are N shops that sell Play Snuke: Shop $1, 2, \ldots, N$. Shop i is A_i minutes' walk from where Takahashi is now, sells Play Snuke for P_i yen (Japanese currency), and currently has X_i Play Snukes in stock.

Now, Takahashi will go to one of those shops on foot and buy Play Snuke if it is still in stock when he gets there.

However, Play Snuke is so popular that the number of consoles in stock (if any) in every shop will decrease by 1 at the following moments: $0.5, 1.5, 2.5, \ldots$ minutes from now.

Determine whether Takahashi can buy Play Snuke. If he can, find the minimum amount of money needed to buy one.

Constraints

- All values in input are integers.
- $1 \le N \le 10^5$
- $1 \le A_i, P_i, X_i \le 10^9$

Input

Input is given from Standard Input in the following format:

```
N
A₁  P₁  X₁
⋮
A_N  P_N  X_N
```

Output

If Takahashi can buy Play Snuke, print the minimum amount of money needed to buy one, as an integer.

If he cannot buy one, print `-1` .

Sample 1

Input	Output
3 3 9 5 4 8 5 5 7 5	8

If he goes to Shop 1, it will still have 2 Play Snukes when he gets there, and he can buy one for 9 yen.

If he goes to Shop 2, it will still have 1 Play Snuke when he gets there, and he can buy one for 8 yen.

If he goes to Shop 3, Play Snuke will be out of stock when he gets there; he cannot buy one.

Sample 2

Input	Output
3 5 9 5 6 8 5 7 7 5	-1

Sample 3

Input	Output
10 158260522 877914575 602436426 24979445 861648772 623690081 433933447 476190629 262703497 211047202 971407775 628894325 731963982 822804784 450968417 430302156 982631932 161735902 880895728 923078537 707723857 189330739 910286918 802329211 404539679 303238506 317063340 492686568 773361868 125660016	861648772