

Problem C. Bus Connections

Input file: standard input
 Output file: standard output
 Time limit: 1 second
 Memory limit: 256 megabytes

Sometimes there is a bus that goes directly from your current location to your destination, which is convenient. Other times, you may need to take two or more buses and switch between them to reach your final destination. It's annoying that when switching from one bus to another, you often need to wait for the next bus to arrive. Wouldn't it be nice if you could time your trip such that you never have to wait for a connection, that you reach a stop in one bus at exactly the time that your next connecting bus arrives?

Input

The first line of input contains an integer $1 \leq b \leq 1000$, the number of buses you need to take to reach your destination. The following b lines each describe the schedule of a bus route, in the order that you need to take them. Each line contains three space-separated integers $0 \leq t \leq 1,000,000$, $1 \leq i \leq 1000$, $1 \leq d \leq 1000$. The first integer t is the time at which the first bus on the route arrives at the stop at which you need to get on it. The arrival time is specified in minutes since noon on January 1, 2021. The second integer i specifies the interval of buses on this route. Thus, buses on this route will arrive at the stop at times $t, t+i, t+2i, t+3i, \dots$. The third integer d is the duration of time in minutes that you need to ride on this bus before reaching the stop at which you get off. After this time, you get off the current bus and get on the following one.

Output

Output a line containing a single integer, the earliest time (in minutes since noon on January 1, 2021) at which you should get on the first bus such that you can then transfer to all the other buses in sequence without ever having to wait when switching buses. If there is no such time, output -1 .

Examples

standard input	standard output
3 101 5 100 100000 7 200 0 4 300	99956
2 0 6 9 0 10 9	-1
8 122 997 491 808 991 290 172 983 560 928 977 101 570 971 592 357 967 123 429 953 835 199 947 295	526173665553865384027818

Note

First sample: Take the first bus at time 99956 (which departs every 5 minutes starting at time 101). Then you arrive at the second bus at time 100056, which perfectly times a departure. You finally swap from the second to third bus at time 100256.

Second sample: The arrival time of the first bus never coincides with the departure time of the second bus.