G. Functions On The Segments

time limit per test: 5 seconds
memory limit per test: 1024 megabytes
input: standard input
output: standard output

You have an array f of n functions.The function $f_i(x)$ $(1 \le i \le n)$ is characterized by parameters: x_1, x_2, y_1, a, b, y_2 and take values:

- y_1, if $x \le x_1$.
- $a \cdot x + b$, if $x_1 < x \le x_2$.
- y_2, if $x > x_2$.

There are m queries. Each query is determined by numbers l, r and x. For a query with number i $(1 \le i \le m)$, you need to calculate the sum of all $f_j(x_i)$ where $l \le j \le r$. The value of x_i is calculated as follows: $x_i = (x + last)$ mod 10^9, where $last$ is the answer to the query with number i - 1. The value of $last$ equals 0 if $i = 1$.

Input

First line contains one integer number n $(1 \le n \le 75000)$.

Each of the next n lines contains six integer numbers: x_1, x_2, y_1, a, b, y_2 $(0 \le x_1 < x_2 \le 2 \cdot 10^5, 0 \le y_1, y_2 \le 10^9, 0 \le a, b \le 10^4)$.

Next line contains one integer number m $(1 \le m \le 500000)$.

Each of the next m lines contains three integer numbers: l, r and x $(1 \le l \le r \le n, 0 \le x \le 10^9)$.

Examples

input
1 1 2 1 4 5 10 1 1 1 2

output
13

input
3 2 5 1 1 1 4 3 6 8 2 5 7 1 3 5 1 4 10 3 1 3 3 2 3 2 1 2 5

output
19 17 11