

Problem C. Courses

Input file: *standard input*
Output file: *standard output*
Time limit: 15 seconds
Memory limit: 1024 mebibytes

Little Misha wants to change his IQ (initially he has 0 IQ). He found m types of courses on the internet. The i -th course type costs c_i bitcoins, changes his IQ by d_i (d_i can be negative, that is, his IQ can decrease after a course), and there are n_i different courses of i -th type. Authors of courses want to earn money, so $c_i \geq |d_i|$.

Misha wants to reach at least k IQ (of course, k can be negative). In order to achieve his goal, he will take a single course every day till some day. A course could be taken multiple times and each time it will affect Misha's IQ.

Now, he has n bitcoins. He is wondering: in how many ways can he spend exactly t bitcoins and reach at least k IQ in the end, for each $1 \leq t \leq n$? Two ways are considered different if they differ in the number of days to study or in a course taken at some day (different courses of the same type are considered different as well).

Input

The first line contains a single integer m ($0 < m < 100$): the number of types of courses.

Each of the next m lines contains three integers c_i, d_i, n_i ($0 < c_i < 10$, $|d_i| \leq c_i$, $0 \leq n_i \leq 10^4$).

And finally, the last line contains two integers n and k ($|k| \leq n \leq 3 \cdot 10^4$, $n > 0$).

Output

Output n integers, each on a separate line. The number on the i -th line should be the number of ways to spend exactly i bitcoins and obtain at least k IQ. Since these numbers can be large, output them modulo 998 244 353.

Examples

<i>standard input</i>	<i>standard output</i>
1	0
1 1 2	4
5 2	8
	16
	32
2	0
1 -1 1	4
1 1 2	8
4 2	48