F: Modified LCS

Time Limit: 1 second(s)

LCS stands for longest common subsequence which is a well known problem. A sequence in this problem means a list of integers, and a sequence X is considered a subsequence of another sequence Y, when the sequence X can be obtained by deleting zero or more elements from the sequence Y without changing the order of the remaining elements.

In this problem you will have two sequences and your task is to find the length of the longest sequence which is a subsequence of both the given sequences.

You are not given the sequences themselves. For each sequence you are given three integers N, F and D, where N is the length of the sequence, F is the first element in the sequence. Each element except the first element is greater than the element before it by D.

For example $N = 5$, $F = 3$ and $D = 4$ represents the following sequence: [3, 7, 11, 15, 19].

There will be at least one integer which belongs to both sequences and it will not be greater than 1 000 000.

Input

Each test case is described in one line which contains 6 integers separated by a single space:

N_1 F_1 D_1 N_2 F_2 D_2

where $(1 \leq N_1, N_2 \leq 10^{18})$ and $(1 \leq F_1, D_1, F_2, D_2 \leq 10^9)$ representing the length of the first sequence, the first element in the first sequence, the incremental value of the first sequence, the length of the second sequence, the first element in the second sequence and the incremental value of the second sequence, respectively.

Output

Print a single line which contains a single integer representing the length of the longest common subsequence between the given two sequences.

Sample Input and Output

Sample Input 1	Output for Sample Input
5 3 4 15 3 1	4

Sample Input 2	Output for Sample Input
10 2 2 7 3 3	3

Sample Input 3	Output for Sample Input
100 1 1 100 1 2	50