

∞ ADDDIVIDE ∞

Given integers A_1, A_2, \dots, A_{10} and B_1, B_2, \dots, B_{10} , find the smallest positive integer N such that all of the following are true:

- $N + A_1$ is divisible by B_1
- $N + A_2$ is divisible by B_2
- ...
- $N + A_{10}$ is divisible by B_{10}

It is guaranteed that the answer does not exceed 100 000 000.

Input

Each of 10 lines contains an integer A_i and B_i separated by a space. ($1 \leq A_i, B_i \leq 10\,000$)

Output

Output the smallest positive integer N such that $N + A_i$ is divisible by B_i for all $i \in \{1, \dots, 10\}$.

Example

Input	Output
549 538 61 147 205 244 1 33 97 104 105 316 297 103 387 457 847 458 91 206	527