Vla-tko, Vla-tko, Vla-tko!

Nobody comes to Vlatko's office hours anymore. Angered, enraged and disgruntled, Vlatko's revenge is a convenient task for COCI:

You are given an infinite arithmetic sequence $A(n) = Cn + D$, defined for all natural numbers n. We want find a sequence of M distinct natural numbers $n_1, n_2, ..., n_M$ less than or equal to 10^{15} such that the corresponding members of sequence $A(n_1), A(n_2), ..., A(n_M)$ all have the same sum of digits in base B.

Please note: Every positive integer N can be written in base B as follows: create the unique string $x_k x_{k-1} ... x_1 x_0$, where $0 \leq x_i < B$ for each i, and the equation $x_k B^k + x_{k-1} B^{k-1} + ... + x_1 B + x_0 = N$ is satisfied. The sum of digits is given with $x_k + ... + x_0$.

INPUT

The first line of input contains four integers C, D, B and M ($1 \leq C, D \leq 10000$, $2 \leq B \leq 5000$, $1 \leq M \leq 250000$).

OUTPUT

The first and only line of output must contain the required numbers, separated by spaces, in an arbitrary order.
Please note: you must output the numbers n_i, not numbers $A(n_i)$. All numbers in the output should be less than or equal to 10^{15}.
The input data will be such that a solution that meets the given conditions exists.

SAMPLE TESTS

input	input
5 3 2 2	2 1 10 3
output	**output**
2 5	2 20 200

Clarification of the test cases:
In the first test case, one of the possible sequences is the sequence in the output. The corresponding members of the arithmetic sequence are 5 * 2 + 3 = 13 and 5 * 5 + 3 = 28. The format of number 13 in base 2 is 1101, whereas the format of number 28 in base 2 is 11100. The sum of digits in both formats is equal to 3.

In the second test case, the corresponding members of the sequence are 2 * 2 + 1 = 5, 2 * 20 + 1 = 41, and 2 * 200 + 1 = 401. Each of the numbers' digits, written in base 10, sum up to 5.