B. Little Dima and Equation

time limit per test: 1 second
memory limit per test: 256 megabytes
input: standard input
output: standard output

Little Dima misbehaved during a math lesson a lot and the nasty teacher Mr. Pickles gave him the following problem as a punishment.

Find all integer solutions x $(0 < x < 10^9)$ of the equation:

$$x = b \cdot s(x)^a + c,$$

where a, b, c are some predetermined constant values and function $s(x)$ determines the sum of all digits in the decimal representation of number x.

The teacher gives this problem to Dima for each lesson. He changes only the parameters of the equation: a, b, c. Dima got sick of getting bad marks and he asks you to help him solve this challenging problem.

Input

The first line contains three space-separated integers: a, b, c $(1 \le a \le 5;\ 1 \le b \le 10000;\ -10000 \le c \le 10000)$.

Output

Print integer n — the number of the solutions that you've found. Next print n integers in the increasing order — the solutions of the given equation. Print only integer solutions that are larger than zero and strictly less than 10^9.

Examples

input
3 2 8
output
3 10 2008 13726

input
1 2 -18
output
0

input
2 2 -1
output
4 1 31 337 967

Codeforces Round #262 (Div. 2)
Finished

→ Virtual participation

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Start virtual contest

→ Problem tags

brute force implementation math

No tag edit access

→ Contest materials

- Announcement
- Tutorial