

Discrete Roots

In this problem, we try to compute discrete k^{th} root modulo n ; given n, k, a ; find all the solutions for x such that $x^k = a \pmod{n}$ and x is coprime with n .

Input

For each input file, there are 3 space separated integers n, k, a .

$n = p^e$ for some odd prime p , integer $e > 0$; $0 \leq a < n \leq 10^9$, $0 \leq k < \phi(n)$, where ϕ is Euler's totient function; the numbers n, a are coprimes.

Output

The first line of the output contains a single integer m , the number of solutions in the range $[0, n - 1]$ that are coprimes with n , followed by m lines that contain the m solutions in ascending order. It is guaranteed that $m \leq 10^4$.

Example

Input:

5 1 3

Output:

1
3