10225 Discrete Logging

Given a prime P, $2 \le P < 2^{31}$, an integer B, $2 \le B < P$, and an integer N, $2 \le N < P$, compute the discrete logarithm of N, base B, modulo P. That is, find an integer L such that

$$B^L == N \pmod{P}$$

Input

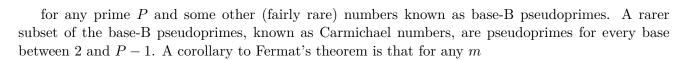
Read several lines of input, each containing $P,\ B,\ N$ separated by a space.

Output

For each line print the logarithm on a separate line. If there are several, print the smallest; if there is none, print ``no solution''.

Note: The solution to this problem requires a well known result in number theory that is probably expected of you for Putnam but not ACM competitions. It is Fermat's theorem that states

$$B^{P-1} == 1 (mod \ P)$$



$$B^{-m} == B^{P-1-m} (mod \ P)$$



5 2 1

5 2 2

5 2 3

5 2 4

5 3 1

5 3 2

5 3 3

5 3 4

5 4 1 5 4 2

5 4 3

5 4 4

12345701 2 1111111

1111111121 65537 1111111111



Sample Output