Given a base b and two non-negative base b integers p and m, compute p mod m and print the result as a base-b integer. p mod m is defined as the smallest non-negative integer k such that $p = a * m + k$ for some integer a.

Input

Input consists of a number of cases. Each case is represented by a line containing three unsigned integers. The first, b, is a decimal number between 2 and 10. The second, p, contains up to 1000 digits between 0 and $b-1$. The third, m, contains up to 9 digits between 0 and $b-1$. The last case is followed by a line containing '0'.

Output

For each test case, print a line giving p mod m as a base-b integer.

Sample Input

```
2 1100 101
10 123456789123456789123456789 1000
0
```

Sample Output

```
10
789
```