13^{th} South African Regional ACM Collegiate Programming Contest

Sponsored by IBM

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Problem F - Purple Balloon
Base increment

Problem Description

The numbers you encounter in everyday use are in base 10: for example, 153 means $1 \times 10^2 + 5 \times 10^1 + 3 \times 10^0$. It is also possible to count in other bases. For example, in base 8 the number 153 would mean $1 \times 8^2 + 5 \times 8^1 + 3 \times 8^0$.

To help someone learning to count, you need a program that will accept a number in some base, and output the next number in the same base.

Input

Your program must accept multiple scenarios, one per line. Each line contains two positive integers, b and n, separated by a single space. b will be between 2 and 9 inclusive. n will be a base b number. Each digit in n will be between 0 and $b-1$ inclusive, and the first digit will not be zero. n will contain at most 8 digits.

The input will be terminated by a single line containing the value -1, equivalent to $b == -1$.

Output

For each line of input containing b and n, your program must output a line containing $n+1$, expressed in base b with no leading zeros.

Sample Input

```
8 153
2 10101010
3 22
-1
```

Sample Output

```
154
10101011
100
```

Time Limit

5 seconds