
P0015. Format of the numbers

P57666_en

Given a natural n , a basis b and a natural number c , we want to write n in basis b using exactly c characters, following the next format:

- If n in basis b has exactly c digits, you only must write n in basis b .
- If n in basis b has less than c digits, you must add hashes on the left.
- If n in basis b has more of c digits, you must write c asterisks instead of n .

Your task is to write a program that, given a sequence of triplets n, b, c , prints for each one a line following this format.

Input

The input is a sequence of triplets n, b, c , with $n \geq 0, 2 \leq b \leq 10$ and $c > 0$.

Output

For each triplet of the input, print a line according to the described format.

Observations

- Strings are not allowed in this problem.
- We suggest you to use a function *number_of_digits* (n, b) that, given two natural numbers n and b with $2 \leq b \leq 10$, returns the number of digits that requires the representation of n in basis b .
- You must use recursion to write n in basis b (without the hashes).

Sample input

```
54321 10 5
 4321 10 5
654321 10 5
 9999 10 20
 125 2 8
 125 3 8
 125 4 8
 125 5 8
 125 6 8
 125 7 8
 125 8 8
 125 9 8
536870912 2 1
536870912 2 32
 0 2 1
 0 10 2
```

Sample output

```
54321
#4321
*****
#####9999
#1111101
###11122
####1331
####1000
####325
####236
####175
####148
*
#100000000000000000000000000000000
0
#0
```

Problem information

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