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
*
##10000000000000000000000000000
0
#0
```

Problem information

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