

# The Magical Bag

Dukkar has the magical bag of power '**P**'. Here power '**P**' of magical bag means any thing kept in the bag will be '**P**' times.

Now Dukkar wanted to distribute equal number of Chocolates among his '**N**' students using that magical bag in the following manner:-

Initially Dukkar has '**Z**' chocolates and he give '**X**' chocolates to first student and keep the remaining chocolates to magical bag so that it became '**P**' times on next step ,again he will take out '**X**' chocolates from bag and give it to the second student and the remaining chocolates in the bag at this step will get '**P**' time on the next step ,this process continue.

Here you have to find minimum '**Z**' so that at last step there are no chocolates in the magical bag (After giving '**X**' chocolates to last student no chocolates should remain in bag)

## Input

First line of input contain **T** ( $<100000$ ) number of test cases and the following **T** lines will contain **N** ( $2 \leq N \leq 10^{18}$ ) and **P** ( $2 \leq P \leq 10^9$ ).

## Output

For each test case you have to print minimum '**Z**' and corresponding '**X**'.As answer can be large print answer modulo 1000000007.

( $Z \% 1000000007$  and  $X \% 1000000007$ )

## Example

### Input:

1  
3 2

### Output:

7 4

### Explanation:-

As  $Z=7$  ,Initially dukkar will give 4 chocolates to first student and kepp 3 chocolates in bag .In the next step it became 6 now he gives 4 chocolates to second student .In the next step remaining 2 chocolates will be came 4 which he will give to third student .Now the bag became empty.