B - String Modulo Easy

You are given 2 numbers N & P. Print N % P.

**Input Format**

First line of input contains T - number of test cases. Its followed by T lines, each line contains 2 numbers N and P, separated by space.

**Constraints**

20 points  
1 <= T <= 100  
1 <= N <= 1018  
1 <= P <= 108

80 points  
1 <= T <= 100  
1 <= N <= 1010000  
1 <= P <= 1015

**Output Format**

For each test case, print the value of N % P, separated by new line.

**Sample Input 0**

4

5 2

4 10

1085377843 81735943

8290823391135830392772803 95972011

**Sample Output 0**

1

4

22420584

30313137

# Logic:

## Modulo is kind of distributive over addition, subtraction and multiplication i.e.,

(a+b)%m = ((a%m)+(b%m))%m  
(a-b)%m = ((a%m)-(b%m))%m  
(a\*b)%m = ((a%m)\*(b%m))%m

Example: 12345 % 9

(10000 + 2000 + 300 + 40 + 5) % 99

(10000 % 99 + 2000 % 99 + 300 % 99 + 40 % 99 + 5 % 99) % 99 ==

(1 + 20 + 3 + 40 + 5) % 99 == 69 % 99 🡪 **Which is the answer.**

(10000 % 99 + 2000 % 99 + 300 % 99 + 40 % 99 + 5 % 99) % 99 can be written as….

((((((((1 \* 10) + 2) \* 10) + 3) \* 10) + 4) \* 10) + 5) % 99

ans = 0  
ans = (0\*10 + 1)%99 🡪 ans = 1  
ans = (1\*10 + 2)%99 🡪 ans = 12  
ans = (12\*10 + 3)%99🡪 ans = 123%99 = 24   
ans = (24\*10 + 4)%99🡪 ans = 244%99 = 46  
ans = (46\*10 + 5)%99🡪 ans = 465%99 = 69  
ans = 69.

#include <iostream>

#include <string>

using namespace *std*;

int main(void)

{

int t; *cin* >> t;

while (t--)

{

*string* n;

long long int p;

*cin* >> n >> p;

long long int res = 0;

for (int i = 0; i < n.*length*(); i++)

res = (res \* 10 + (int)n[i] - '0') % p;

*cout* << res << "\n";

}

return 0;

}