Problem F – Fractional digits challenge

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Jaime, the lazy guinea pig we all love, has a craze for multipliying all the numbers he sees when walking down the street. We could even say he is very fast doing this task.

Jaime also loves sleeping, but he can't do it without first doing his multiplications. One of his friends, Jiren, doesn't like to see him asleep and decided to put a challange on Jaime, he thought: What would happen if Jaime can't see the numbers he has to multiply?

After a while Jiren gave Jaime a fraction $\frac{a}{b}$ and asked the following: What is the value of the multiplication of the first n digits of the $\frac{a}{b}$ decimal expression after the decimal point?

Jaime hurried to answer that in many cases the result will be 0, then his friend, in order to make it more interesting, told him that all the zeros were to be changed by ones before multiplying. For example $\frac{3}{96} = 0.03125$, but changing the $0's$ by $1's$ would be 0.13125, and if the multiplication of the first 3 digits after the decimal point were asked, the answer would be 3. Can you help Jaime solve the challenge of his friend (Jaime is very sleepy right now and if you help him he could sleep a lot)?

Input

The first line of the input contains one integer T ($1 \leq T \leq 100$), the number of test cases. The next T lines contain 3 integers each a, b, n ($1 \leq a < b \leq 10^4, 1 \leq n \leq 10^{18}$.)

Output

For each case output in a line the value of the multiplication of the first n digits after the decimal point of the fraction $\frac{a}{b}$. As the answer can be very large print it modulus 188888881.

Sample input 1	**Sample output 1**
2 3 96 12 1 3 3	30 27