Eternal Numbers

Description

A number is a mathematical object used to count, measure, and label. The original examples are the natural numbers 1, 2, 3, 4, and so forth. Individual numbers can be represented by symbols, called numerals; for example, "5" is a numeral that represents the number five. As only a small number of symbols can be memorized, basic numerals are commonly organized in a numeral system, which is an organized way to represent any number. The most common numeral system is the Hindu–Arabic numeral system, which allows representing any number by a combination of ten basic numerals called digits. In addition to their use in counting and measuring, numerals are often used for labels (as with telephone numbers), for ordering (as with serial numbers), and for codes (as with ISBNs). In common usage, a numeral is not clearly distinguished from the number that it represents.

Recently, there are some special numbers that have been found, and we call the special numbers as `"Eternal Numbers"`.

Suppose that there is an N-digit number $A(A_1A_2...A_{N-1}A_N)$. We call A is an `"Eternal Numbers"` if and only if $A_1 \leq A_2 \geq A_3 \leq A_4 \geq A_5 \leq ... \geq a_N$.

Since Yen-Jen are interested in `"Eternal Numbers"`, he wants to study `"Eternal Numbers"` under some restrictions.

Each restriction will look like the following:

- $|A_i - A_{i+1}| = k$, where $1 \leq i < N$, and $0 \leq k \leq 9$

Now, Yen-Jen wants to ask you to calculate how many N-digit `"Eternal Numbers"` satisfies all the restrictions.

Input

The first line of the input contains an integer T denotes the number of test cases in this input.

The first line of each test case contains two integers N and M. N is the number of digits, and M is the number of restrictions.

The following M lines describe restrictions. Each line contains two integers, i, and k, show as above.

- $\sum M \leq 5000$
- $1 \leq T \leq 5000$
- $0 \leq M \leq 5000$
- $3 \leq N \leq 10^{18}$, N is odd.
- $1 \leq i < N$
- $0 \leq k \leq 9$

Output

For each test case, output an integer in a line. This integer is the number of N-digit `"Eternal Numbers"` satisfies all the restrictions. Since the answer may be very large, please modulo $10^9 + 7$.

Sample Input

```
3
3 0
3 1
1 8
5 2
2 6
4 5
```

Sample Output

```
330
10
150
```