Problem I. Integers and Ranges

Input file:	*standard input*
Output file:	*standard output|*
Time limit:	3 seconds
Memory limit:	512 mebibytes

Isaac has a decimal integer $\overline{a_1 a_2 \dots a_n}$, possibly with leading zeroes. He knows that for m ranges $[l_1, r_1], [l_2, r_2], \dots, [l_m, r_m]$, it holds that $a_{l_i} \times a_{l_i+1} \times \dots \times a_{r_i} \bmod 9 = 0$. Find the number of valid integers $\overline{a_1 a_2 \dots a_n}$, modulo $(10^9 + 7)$.

Input

The input consists of several test cases and is terminated by end-of-file.

The first line of each test case contains two integers n and m.

The ith of the following m lines contains two integers l_i and r_i.

- $1 \le n, m \le 10^3$
- $1 \le l_i \le r_i \le n$
- There are at most 100 test cases.

Output

For each test case, print an integer which denotes the result.

Example

standard input	standard output|
2 1 1 2 4 2 1 3 2 4 50 1 1 50	40 4528 100268660