 Titulo del problema

**Nombre de archive Fuente:**  A.java, A.cpp o A.py

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| Input The input file contains several test cases, each of them as described below.  The input consists of the following integers:   * the value of *N* , an integer, on the first line; * the value of *M* , an integer, on the second line.   Limits  The input satisfies 1 *≤ N ≤* 8 and 1 *≤ M ≤* 1018. | Output For each test case, the output must follow the description below.  The output should consist of the total number of tilings, given modulo 109, on a single line. |
| Sample Input 2  2  2  4 | Sample Output 7  71 |