# **Cycle Representation**



Let n be a fixed integer.

A **permutation** is a bijection from the set  $\{1, 2, \ldots, n\}$  to itself.

A **cycle of length** k ( $k \geq 2$ ) is a permutation f where different integers exist  $i_1, \ldots, i_k$  such that  $f(i_1) = i_2, f(i_2) = i_3, \ldots, f(i_k) = i_1$  and, for all x not in  $\{i_1, \ldots, i_k\}$ , f(x) = x.

The **composition of** m **permutations**  $f_1, \ldots, f_m$ , written  $f_1 \circ f_2 \circ \ldots \circ f_m$ , is their composition as functions.

Steve has some cycles  $f_1, f_2, \ldots, f_m$ . He knows the length of cycle  $f_i$  is  $l_i$ , but he does not know exactly what the cycles are. He finds that the composition  $f_1 \circ f_2 \circ \ldots \circ f_m$  of the cycles is a cycle of length n. He wants to know how many possibilities of  $f_1, \ldots, f_m$  exist.

## **Input Format**

The first line contains T, the number of test cases.

Each test case contains the following information:

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

The second line of each test case contains m integers,  $l_1, \ldots, l_m$ .

#### **Constraints**

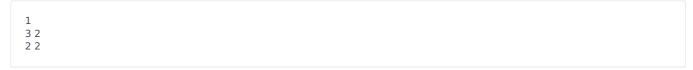
 $n\geqslant 2$ Sum of  $n\leqslant 1000$  $2\leqslant l_i\leqslant n$ Sum of  $m\leq 10^6$ 

### **Output Format**

Output T lines. Each line contains a single integer, the answer to the corresponding test case.

Since the answers may be very large, output them modulo  $(10^9 + 7)$ .

#### **Sample Input**



#### **Sample Output**

6

# **Explanation**

There are three cycles of length 2. The composition of two cycles of length 2 is a cycle of length 3 if, and only if, the two cycles are different. So, there are  $3 \cdot 2 = 6$  possibilities.