

Problem H. Partition Number

Input file: *standard input*
Output file: *standard output*
Time limit: 3 seconds
Memory limit: 256 mebibytes

You are given an integer set $A = \{a_1, a_2, \dots, a_n\}$. Please calculate the number of solutions for equation $x_1 + x_2 + \dots + x_k = m$, where x_i are positive integers, $x_1 \leq x_2 \leq \dots \leq x_k$ and $x_i \notin A$.

As the answer may be very large, you are only asked to calculate it modulo $(10^9 + 7)$.

Input

There are multiple test cases. The first line of the input contains an integer T indicating the number of test cases. For each test case:

The first line contains two integers n and m ($1 \leq n \leq 500$, $n \leq m \leq 3 \cdot 10^5$).

The second line contains n integers a_1, a_2, \dots, a_n ($1 \leq a_i \leq m$, $a_i \neq a_j$ for all $i \neq j$).

It is guaranteed that the sum of n over all test cases does not exceed 500.

Output

For each test cases, output an integer denoting the answer.

Example

standard input	standard output
5	2
1 4	3
1	4
1 4	1
2	0
1 4	
3	
3 4	
1 2 3	
4 4	
1 2 3 4	

Note

There are 5 solutions for $m = 4$ if the constraints set A is empty. They are:

$$\begin{aligned} 4 &= 1 + 1 + 1 + 1 \\ &= 1 + 1 + 2 \\ &= 1 + 3 \\ &= 2 + 2 \\ &= 4 \end{aligned}$$