Circle Summation

Circle Summation (30 Points)

There are N children, numbered 1,2,...,N, sitting around a circle in a clockwise manner. The ith child has a piece of paper with number ai written on it. They play the following game:

In the first round, the child numbered ***x*** adds to his number the sum of the numbers of his neighbors.
In the second round, the child next in clockwise order adds to his number the sum of the numbers of his neighbors, and so on.
The game ends after M rounds have been played.

Input:
The first line contains T, the number of test cases. T cases follow. The first line for a test case contains two space seperated integers N and M. The next line contains N integers, the ith number being ai.

Output:
For each test case, output N lines each having N integers. The jth integer on the ith line contains the number that the jth child ends up with if the game starts with child **i** playing the first round. Output a blank line after each test case except the last one. Since the numbers can be really huge, output them modulo 1000000007.

Constraints:
1 <= T <= 15
3 <= N <= 50
1 <= M <= 10^9
1 <= ai <= 10^9

Sample Input:
2
5 1
10 20 30 40 50
3 4
1 2 1

Sample Output:
80 20 30 40 50
10 60 30 40 50
10 20 90 40 50
10 20 30 120 50
10 20 30 40 100

23 7 12
11 21 6
7 13 24