1125 - Divisible Group Sums

Given a list of N numbers you will be allowed to choose any M of them. So you can choose in ${}^{N}C_{M}$ ways. You will have to determine how many of these chosen groups have a sum, which is divisible by D.

Input

Input starts with an integer $T (\leq 20)$, denoting the number of test cases.

The first line of each case contains two integers N ($0 < N \le 200$) and Q ($0 < Q \le 10$). Here N indicates how many numbers are there and Q is the total number of queries. Each of the next N lines contains one 32 bit signed integer. The queries will have to be answered based on these N numbers. Each of the next Q lines contains two integers D ($0 < D \le 20$) and M ($0 < M \le 10$).

Output

For each case, print the case number in a line. Then for each query, print the number of desired groups in a single line.

Sample Input	Output for Sample Input
2	Case 1:
10 2	2
1	9
2	Case 2:
3	1
4	
5	
6	
7	
8	
9	
10	
5 1	
5 2	
5 1	
2	
3	
4	
5	
6	
6 2	