
Problem A. The Coefficient

Input file: standard input
Output file: standard output
Time limit: 2 seconds
Memory limit: 64 megabytes

A very basic operation in Algebra is to perform polynomial expansion. It has many levels to it, a very simple one is $(a + b)^2 = a^2 + 2ab + b^2$. It becomes rather complex when both number of terms (k) and power (n) increases. We can generalize the polynomial as $(a_1 + a_2 + a_3 + \dots + a_k)^n$.

After expanding a polynomial, figuring out the coefficient of a term k_i which has power n_i is a very common task for mathematicians and others alike. For example, if it is asked that what is the coefficient of a^2b after expanding $(a + b)^3$, then the answer is 3. Looking at the expansion, $a^3 + 3a^2b + 3ab^2 + b^3$, we can see that it is correct.

Given a polynomial and a set of variables with varying combinations (ab, a^2b, ab^2, a^2 e.g.), you are required to find out the corresponding coefficient of that combination in the expansion of that polynomial.

Input

The first line of input contains two integers k ($1 \leq k \leq 20$) and n ($1 \leq n \leq 20$) which represents number of terms and power respectively.

The next line contains one integer q ($1 \leq q \leq 1000$), which is the number of query.

The following q lines contains k integers each (p_1, p_2, \dots, p_k) where ($0 \leq p_i \leq n$), defining the power combination of each variable for which you need to find the coefficient and $p_1 + p_2 + p_3 + \dots + p_k = n$.

Output

For each query output the coefficient one per line.

Examples

standard input	standard output
2 3 1 2 1	3
3 18 1 15 2 1	2448
2 5 4 1 4 2 3 3 2 4 1	5 10 10 5

Note

In the first sample input:

2 and 3 in the first line means $(a_1 + a_2)^3$.

1 in the next line is the number of queries. 2 and 1 in the first query means $a_1^2a_2$.

Now the expansion of $(a_1 + a_2)^3$ is $(a_1^3 + 3a_1^2a_2 + 3a_1a_2^2 + a_2^3)$. We can see from this that the coefficient of the power combination $a_1^2a_2$ is 3.