Coeficientes

The problem is to calculate the coefficients in expansion of polynomial $(x_1+x_2+...+x_k)^n$.

Input

The input will consist of a set of pairs of lines. The first line of the pair consists of two integers n and k separated with space ($0 < n, k < 13$). This integers define the power of the polynomial and the amount of the variables. The second line in each pair consists of k non-negative integers $n_1, ..., n_k$, where $n_1+...+n_k=n$.

Output

For each input pair of lines the output line should consist one integer, the coefficient by the monomial $x_1^{n1}x_2^{n2}...x_k^{nk}$ in expansion of the polynomial $(x_1+x_2+...+x_k)^n$.

Example

Input:
2 2
1 1
2 12
1 0 0 0 0 0 0 0 0 0 1 0

Output:
2
2