# Problem B
## Sewing Buttons with Grandma

*Source file name:* `buttons.c, buttons.cpp` *or* `buttons.java`

After so many years of studying math in the Academy of Colombian Mathematics ($ACM$) in the tropic, Eloi has finally decided to visit his grandmother for the winter in the north hemisphere. "Buttons and patches and the cold wind blowing, the days pass quickly when I am sewing" she says – Eloi now remembers how grandma quilts have love in every stitch. As a matter of fact, he has decided to learn the useful handicraft art of sewing buttons with grandma.

Eloi has realized that there is an interesting mathematical puzzle related to the task of sewing buttons to the front of a shirt. Given a collection of $n_1$ buttons of color $c_1$, $n_2$ buttons of color $c_2$, ..., $n_k$ buttons of color $c_k$, and a shirt with $m$ front buttonholes, in how many ways the buttonholes can be assigned $m$ buttons from the $n_1+\cdots+n_k$ buttons?

## Input

The input consists of several test cases. The first line of each test case contains two integers $m$ and $k$ separated by a blank ($1\leq m\leq 50$, $1\leq k\leq 50$). Then $k$ lines follow each containing an integer $n_i$ with $1\leq n_i\leq 50$. The last test case is followed by a line containing two zeros.

*The input must be read from the file* buttons.in.

## Output

The output consists of one line per test case containing the number of ways the $m$ buttonholes can be assigned $m$ buttons from the $n_1+\cdots+n_k$ buttons, assuming that the colors $c_1,\ldots,c_k$ are pairwise distinct.

*The output must be written to standard output.*

| Sample Input | Sample output |
|---|---|
| 1 3 | 3 |
| 3 | 7 |
| 1 | 0 |
| 1 | |
| 3 2 | |
| 4 | |
| 2 | |
| 3 2 | |
| 1 | |
| 1 | |
| 0 0 | |