

## Problem G. Paint

Input file: *standard input*  
Output file: *standard output*  
Time limit: 2 seconds  
Memory limit: 512 mebibytes

Snuke wants to paint a picture. His picture is simply a sequence of black and white cells.

Initially, he prepares a strip of white paper, and divides it into  $N$  cells. Then, he performs  $K$  operations. In the  $i$ -th operation, he chooses consecutive  $a_i$  cells, and paint these cells black. All chosen white cells will become black, and all chosen black cells will remain unchanged.

How many distinct pictures can he draw?

Compute the answer modulo  $10^9 + 7$ . Two pictures are considered different if the color of at least one cell is different. We don't rotate pictures — for example, (black – black – white) and (white – black – black) are different pictures.

### Input

First line of the input contains two integers  $N$  and  $K$  ( $1 \leq N \leq 10^9$ ,  $1 \leq K \leq 4$ ). The  $i$ -th of next  $K$  lines contains  $a_i$  — number of cells for  $i$ -th operation ( $1 \leq a_i \leq N$ ).

### Output

Print the answer in a single line.

### Examples

standard input	standard output
10 2 1 1	55
1000000000 4 2015 2015 123456789 27	782767239

### Note

In Sample 1, you can draw all pictures that have either one or two black cells.