

Problem J. Hyperrectangle

Input file: *standard input*
Output file: *standard output*
Time limit: 2 seconds
Memory limit: 256 mebibytes

Snuke received a d -dimensional hyperrectangle of size $l_1 \times \cdots \times l_d$ as a birthday present. Snuke placed it such that its i -th coordinate becomes between 0 and l_i , and ate the part of the hyperrectangle that satisfies $x_1 + \cdots + x_d \leq s$. (Here x_i denotes the i -th coordinate). Let V be the volume of the part eaten by Snuke. We can prove that $d!V$ (V times the factorial of d) is always an integer. Compute $d!V$ modulo $10^9 + 7$.

Input

First line of the input file contains one integer d ($2 \leq d \leq 300$). Then d lines follow; i -th of these lines contain one integer l_i ($1 \leq l_i \leq 300$). Last line contains one integer s ($0 \leq s \leq \sum l_i$).

Output

Print $d!V$ modulo $10^9 + 7$.

Examples

standard input	standard output
2 6 3 4	15
5 12 34 56 78 90 123	433127538

Note

Illustration to Sample 1:

