

# Sum of subsequences

Given an positive integer  $n$  and a sequence  $a_1 \dots a_n$ . There are  $q$  queries. Each query has one of two formats:

- Format 0 |  $r$  |  $k$ : you need to output the  $k$ -th smallest positive integer that can't be partition into a sum of any subsequence of  $a_1 \dots a_r$ .
- Format 1 |  $r$  |  $x$ : you need to output the numbers of ways to partition  $x$  into a sum of a subsequence of  $a_1 \dots a_r$  (or the numbers of subsequence that sum of all its elements equal to  $x$ ) (modulo  $2^{32}$ ).

## Input

- First line: two positive  $n$  and  $q$  ( $1 \leq n \leq 100$ ,  $1 \leq q \leq 10000$ )
- Second line:  $n$  positive  $a_1 \dots a_n$  ( $0 \leq a_i \leq 100$ )
- Next  $q$  lines: each line denotes a query with one of two format listed above ( $1 \leq l \leq r \leq n$ ,  $1 \leq k \leq 10^9$ ,  $0 \leq x \leq 10^9$ )

## Output

- $q$  lines: the  $i$ -th line is the answer of  $i$ -th query.

## Sample

### Input:

```
5 3
1 0 2 4 1
0 2 3 2
1 1 4 0
1 2 5 3
```

### Output:

```
3
1
2
```