



# Stamps

Given a set of  $N$  stamp values (e.g., {1 cent, 3 cents}) and an upper limit  $K$  to the number of stamps that can fit on an envelope, calculate the largest unbroken list of postages from 1 cent to  $M$  cents that can be created.

For example, consider stamps whose values are limited to 1 cent and 3 cents; you can use at most 5 stamps. It's easy to see how to assemble postage of 1 through 5 cents (just use that many 1 cent stamps), and successive values aren't much harder:

- $6 = 3 + 3$
- $7 = 3 + 3 + 1$
- $8 = 3 + 3 + 1 + 1$
- $9 = 3 + 3 + 3$
- $10 = 3 + 3 + 3 + 1$
- $11 = 3 + 3 + 3 + 1 + 1$
- $12 = 3 + 3 + 3 + 3$
- $13 = 3 + 3 + 3 + 3 + 1$ .

However, there is no way to make 14 cents of postage with 5 or fewer stamps of value 1 and 3 cents. Thus, for this set of two stamp values and a limit of  $K=5$ , the answer is  $M=13$ .

The most difficult test case for this problem has a time limit of 3 seconds.

**PROGRAM NAME: stamps**

## INPUT FORMAT

Line 1: Two integers  $K$  and  $N$ .  $K$  ( $1 \leq K \leq 200$ ) is the total number of stamps that can be used.  $N$  ( $1 \leq N \leq 50$ ) is the number of stamp values.

Lines 2..end:  $N$  integers, 15 per line, listing all of the  $N$  stamp values, each of which will be at most 10000.

## SAMPLE INPUT (file stamps.in)

```
5 2
1 3
```

## OUTPUT FORMAT

Line 1: One integer, the number of contiguous postage values starting at 1 cent that can be formed using no more than  $K$  stamps from the set.

## SAMPLE OUTPUT (file stamps.out)

**Submit a solution:**

No file chosen

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