Money Bag

Input file:	`standard input`
Output file:	`standard output`
Time limit:	1 second
Memory limit:	256 megabytes

Meow is a legendary bank robber. One day, when carrying out his usual heist, he found that the bank had more gold bars than he expected. He only brought a money bag with volume V. However, the bank has n gold bars, each with their own volume.

Meow knew that the larger the volume of the gold bar, the more it was supposed to be worth. Hence, to maximize his profit, he would like to take some (or all) of those n gold bars and put it in his money bag, such that the remaining space in the bag is minimized.

Input

The first line contains an integer V ($0 \leq V \leq 20000$) – the volume of the money bag

The second line contains an integer n ($1 \leq n \leq 30$) – the number of gold bars available inside the bank

The third line contains n positive integers $a_1, a_2, ..., a_n$, each representing the weight of the gold bar. ($1 \leq a_i \leq 1000$)

Output

Print a single integer, the remaining space of the bag.

Examples

standard input	standard output
20 3 10 5 5	0
24 3 20 1 5	3

Note

In the first example, Meow is able to fit all gold bars inside his bag with no extra remaining space.

In the second example, Meow is only able to fit gold bar with volume 20 and 1 in his bag, leaving 3 extra remaining space.