# CCC '13 S2 - Bridge Transport

**Canadian Computing Competition: 2013 Stage 1, Senior #2**

A train of railway cars attempts to cross a bridge. The length of each car is 10m but their weights might be different. The bridge is 40m long (thus can hold $4$ train cars at one time). The bridge will crack if the total weight of the cars on it at one time is greater than a certain weight. The cars are numbered starting at $1$, going up to $N$, and they cross the bridge in that order (i.e., $1$ immediately followed by $2$, which is immediately followed by $3$, and so on).

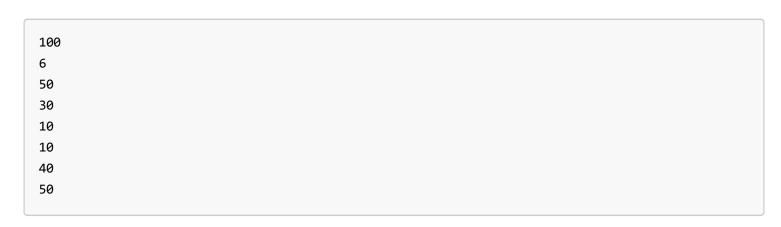What is the largest number $T$ of railway cars such that the train of cars $1...T$ (in order) can cross the bridge?

## Input Specification

The first line of input is the maximum weight $W$ ($1 \leq W \leq 100\,000$) that the bridge can hold at any particular time. The second line of input is the number $N$ ($1 \leq N \leq 100\,000$) which is the number of railway cars that we wish to move across the bridge. On each of the next $N$ lines of input, there will be a positive integer $w_i$ ($1 \leq i \leq N$, $1 \leq w_i \leq 100\,000$) which represents the weight of the $i^{th}$ railway car in the sequence.

## Output Specification

Your output should be a non-negative integer representing the maximum number of railway cars that can be brought across the bridge in the order specified.

## Sample Input 1

```
100
6
50
30
10
10
40
50
```

## Output for Sample Input 1

```
5
```

## Explanation of Output for Sample Input 1

The first four railway cars have total weight $50 + 30 + 10 + 10 = 100$, which is not greater than what the bridge can hold. When the first railway car leaves, and the next comes on, we have a total weight of $30 + 10 + 10 + 40 = 90$, which is not greater than what the bridge can hold. The last four cars would cause the bridge to break, since $10 + 10 + 40 + 50 = 110$ which is greater than the bridge can hold. So, only the first $5$ railway cars can be taken across the bridge.

## Sample Input 2

```
100
3
150
1
1
```

## Output for Sample Input 2

```
0
```

## Explanation of Output for Sample Input 2

When the first railway car enters the bridge, its weight of $150$ will exceed the maximum weight the bridge can hold. Thus, we cannot bring any railway cars across the bridge.