Two coins of each kind (3)   X92609_en

Given a number x and n different coin values $c_1 \ldots c_n$, compute in how many ways it is possible to achieve change x by using each value at most twice. Here, two coins with the same value are considered equal.

For example, if $x = 4$ and the available values are 1 and 2, then there are two ways to achieve it: $1 + 1 + 2$ and $2 + 2$. As another example, if $x = 5$ and the available values are 1, 2, 3, 4 and 5, then there are five ways: $1 + 1 + 3$, $1 + 2 + 2$, $1 + 4$, $2 + 3$ and 5.

Input

Input consists of several cases, with only integer numbers. Every case begins with x and n, followed by $c_1 \ldots c_n$. Assume $1 \leq n \leq 15$, $1 \leq c_i \leq x \leq 10^6$, and that all c_i are different.

Output

For every case print the number of different ways to achieve change exactly x by using each value at most twice.

Hint

A simply pruned backtracking should be enough.

Sample input

```
4 2   1 2
400 1   200
400 1   300
5 3   4 2 1
5 5   1 2 3 4 5
```

Sample output

```
2
1
0
2
5
```

Problem information

Author : Salvador Roura
Translator : Albert Atserias
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