

You may solve the following 3 exercises in the coding language of your choice. Computationally efficient solutions are desired, assume inputs might be arbitrarily large.

EX1: ASCII codes

Write a function that, given a string of digits, translates it into a human sentence, assuming the digits are a chain of ascii codes. Translate the following 6 sentences:

1221019811497

1145010050

701051141151164432115111108118101321161041013211211411198108101109463284104101110443211911410511610132116104101329911110010146

8211798121321051153211411798981051151043332807280321051153211210411297110116971151161059933

66101102111114101321151111021161199711410132999711032981013211410111711597981081013210511632102105114115116321049711532116111329810132117115979810810146

6711110010132105115321081051071013210411710911111446328710410111032121111117321049711810132116111321011201121089710511032105116443210511639115329897100

EX2: Cool words

Write a function that for a given string, yields the number of unique words which can be created from permutations of the string, and also contain the substrings c3po and r2d2 (both of them). Extra kudos if the program is particularly fast (we will test it both with small and large strings).

eg.

$F("r2d2c3pxxxx") = 0$

$F("c3por2d2") = 2 [c3por2d2, r2d2c3po]$

$F("223xcpor2d") = 6 [xc3por2d2, c3poxr2d2, c3por2d2x, xr2d2c3po, r2d2xc3po, r2d2c3pox]$

EX3: Small sums

A certain value v is given to you, as well as some different numbers. Your program must compute how many of the given numbers can be added up with other two given numbers, so that the sum is not greater than v . You can suppose that there are, at least, three numbers.

For instance, if v is 15 and the given numbers are 12, 2, 5, 14 and 1, there only is a number

(14) that cannot be added up with other two numbers without exceeding 15. All the other numbers can be added up. For instance, 2 can be added up with 5 and 1, giving as a result 8, that is less or equal than 15.

Input

The input consists of a line with an integer v , followed by a line with a number n between 3 and 10000, followed by a line with n different numbers.

Output

Your program must print a line with the quantity of the given numbers that can be added up with other two of these numbers so that the result is not greater than v .

| Input 1 | Output 1 |
|--------------------------------|----------|
| 15 5 12 2 5 14 1 | 4 |
| Input 2 | Output 2 |
| 6 3 1 2 3 | 3 |
| Input 3 | Output 3 |
| -20 6 25 15 5 -5 -15 -25 | 5 |
| Input 4 | Output 4 |
| 100 3 33 34 35 | 0 |