

B. Powers of Two

time limit per test: 3 seconds

memory limit per test: 256 megabytes

input: standard input

output: standard output

You are given n integers a_1, a_2, \dots, a_n . Find the number of pairs of indexes i, j ($i < j$) that $a_i + a_j$ is a power of 2 (i. e. some integer x exists so that $a_i + a_j = 2^x$).

Input

The first line contains the single positive integer n ($1 \leq n \leq 10^5$) — the number of integers.

The second line contains n positive integers a_1, a_2, \dots, a_n ($1 \leq a_i \leq 10^9$).

Output

Print the number of pairs of indexes i, j ($i < j$) that $a_i + a_j$ is a power of 2.

Examples

input
4 7 3 2 1
output
2

input
3 1 1 1
output
3

Note

In the first example the following pairs of indexes include in answer: (1, 4) and (2, 4).

In the second example all pairs of indexes (i, j) (where $i < j$) include in answer.