

Problem D : New Year and Pairs

You are given n integers a_1, a_2, \dots, a_n . Find the number of pairs of indices i, j ($i < j$) such that $a_i + a_j$ is a power of 2 (i.e., there exists an integer x such 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 indices i, j ($i < j$) such that $a_i + a_j$ is a power of 2.

Examples

Standard Input	Standard Output
4 7 3 2 1	2

Standard Input	Standard Output
3 1 1 1	3

Note:

In the first example the following pairs of indices are included in the answer: (1, 4) and (2, 4).

In the second example all pairs of indices (i, j) (where $i < j$) are included in the answer.