



## 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.