

Transform to prime

Given an array of n integers. Find minimum number to be inserted in array, so that sum of all elements of array becomes prime. If sum is already prime, then return 0.

Input:

First line consists of T test cases. First line of every test case consists of N , denoting number of elements of array. Second line of every test case consists of elements of array.

Output:

Single line output, print the required answer.

Constraints:

$1 \leq T \leq 100$

$1 \leq N \leq 1000$

Example:

Input:

1

5

2 4 6 8 12

Output:

5