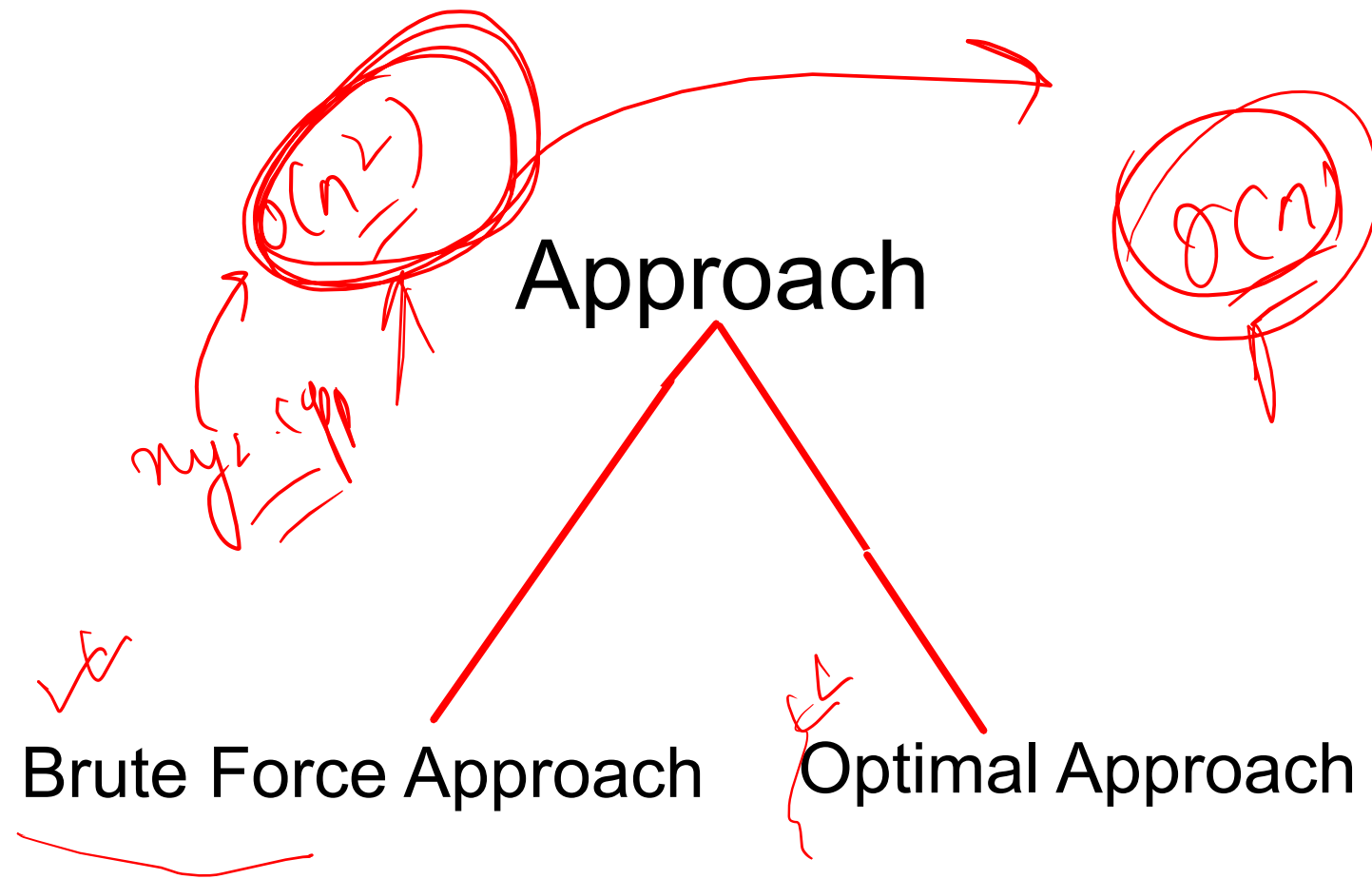


# Approach



# Brute Force Technique

1. A method of accomplishing something primarily by means of [strength](#), without the use of great [skill](#), [mechanical aids](#) or [thought](#). [\[quotations ▼\]](#)

*We lifted the car by **brute force**.*

2. ([computer science](#)) A method of [computation](#) wherein the computer is let to try all [permutations](#) of a [problem](#) until one is found that provides a solution, in contrast to the implementation of a more intelligent [algorithm](#).

*We lifted the car by **brute force**.*



$O(n^2)$



**Brute Force Technique**



**Vs**



$O(n)$



**Optimised Technique**



## Cards and Values

### Description

Chunnu has a collection of cards. Each card has a value assigned to it. He wants to check if there exist two cards  $N$  and  $M$  such that  $N$  is double the value of  $M$  (i.e  $N = 2 * M$ ).

Print "Yes" without quotes, if a solution exists, else print "No" without quotes.

- The value of all the cards are stored in an array ( `arr` ) or length `x` .

### Input

The first and the only line contains the value of all the cards

### Output

Print "Yes" without quotes if the solution exists, else print "No" without quotes.

#### Sample Input 1

```
4
1 2 3 4
```

#### Sample Output 1

```
Yes
```

#### Sample Input 2

```
5
5 0 9 7 20
```

#### Sample Output 2

```
No
```

Chunnu has a collection of cards. Each card has a value assigned to it. He wants to check if there exist two cards  $N$  and  $M$  such that  $N$  is double the value of  $M$  (i.e.  $N = 2 * M$ ).

Print "Yes" without quotes, if a solution exists, else print "No" without quotes.

- The value of all the cards are stored in an array ( arr ) of length  $x$ .

Sample Input 1

4  
1 2 3 4

Sample Output 1

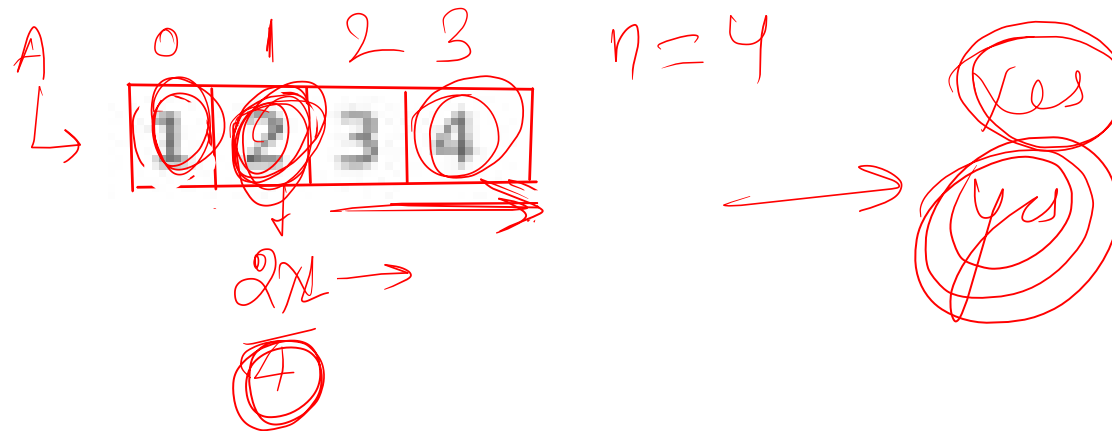
Yes

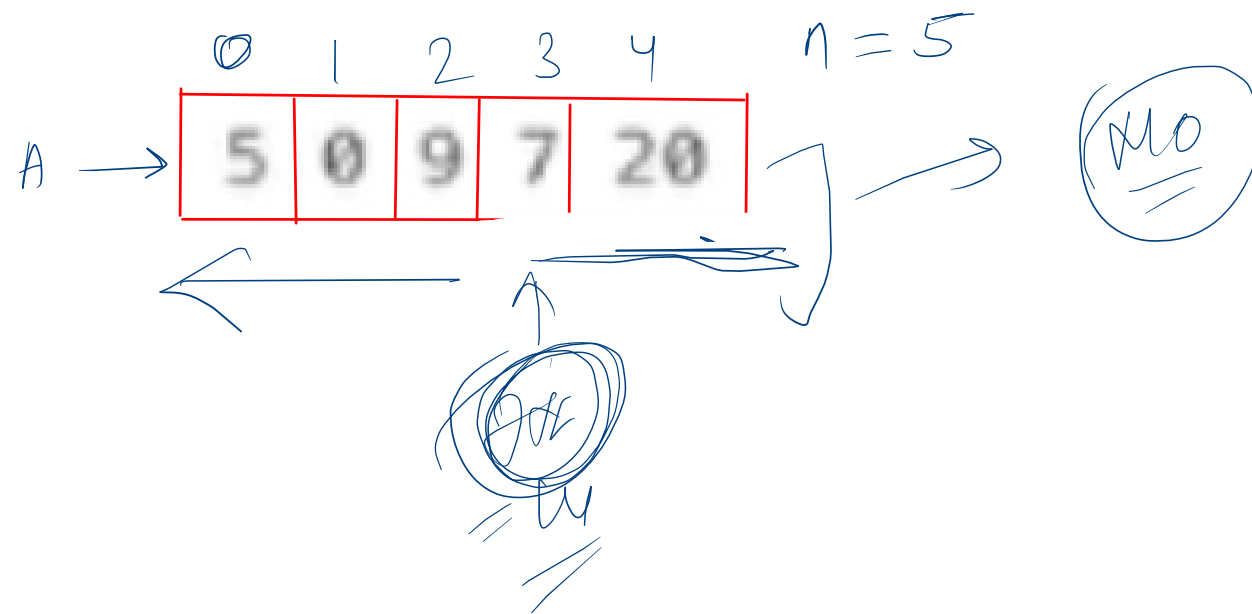
Sample Input 2

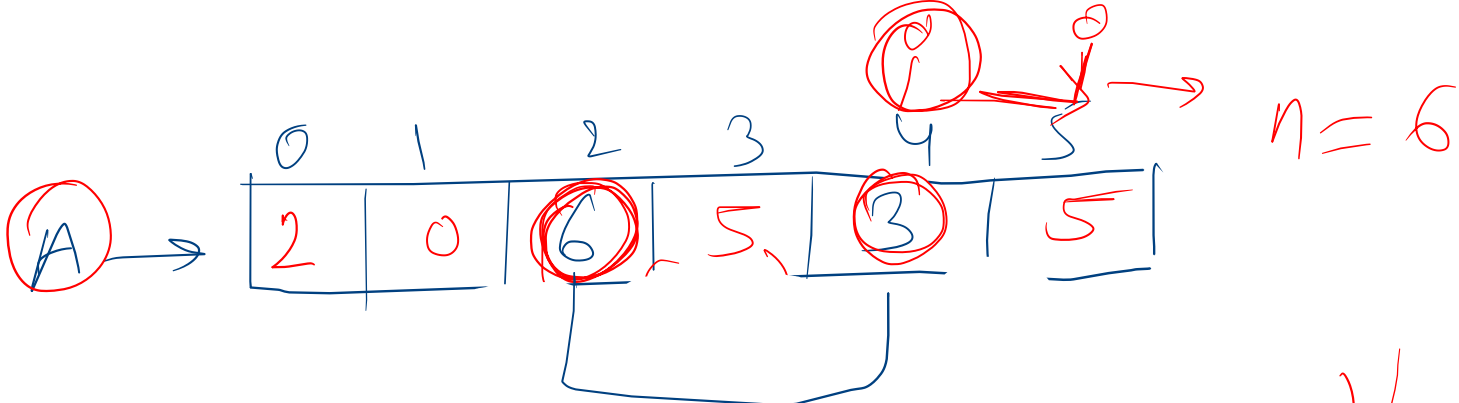
5  
5 0 9 7 20

Sample Output 2

No







```
for (int i = 0; i < n; i++) {  
    for (int j = i + 1; j < n; j++) {  
        if (A[i] * 2 == A[j]) A[i] = A[j] + 2;  
        count <= n; // 10 to 9  
    }  
    count <= n; // 10 to 9  
}
```



## NOTE

### 1. Brute Force Technique:

- For some problems, using the **brute force technique** may lead to a **TLE (Time Limit Exceeded)** error, or some test cases **may fail**.

### 2. Don't Worry:

- If this happens, **don't worry**—please **proceed to the next question** and continue.

### 3. Optimized Techniques:

- In **later units**, you will learn about the **optimized techniques** that will help you avoid TLE errors.



## Intersection of Array

### Description

You are given 2 arrays of N integers. Your task is to write a program that finds the one integer which is common in both arrays.

Note: There is always one integer common in both arrays.

### Input

#### Input Format

First line of input contains N

Second line contains N space separated integers making the first array

Third line contains N space separated integers making the second array

#### Constraints

$N < 1000$

### Output

#### Output Format

Output that one integer which is common in both arrays

#### Sample Input 1

```
3
4 5 7
9 2 5
```

#### Sample Output 1

```
5
```

You are given 2 arrays of N integers. Your task is to write a program that finds the one integer which is common in both arrays.

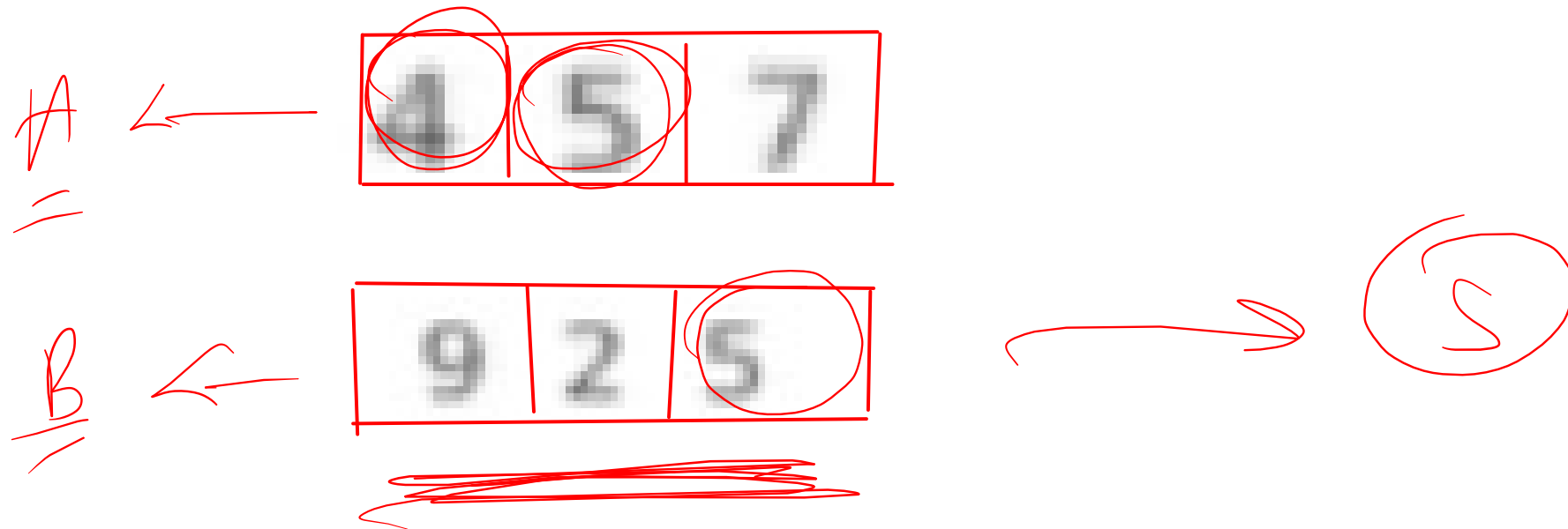
Note: There is always one integer common in both arrays.

Sample Input 1 

```
3
4 5 7
9 2 5
```

Sample Output 1

5



	0	1	2	3	4
<u>a1</u> →	7	9	4	5	6

	0	1	2	3	4
<u>a2</u> →	14	2	15	16	4

```
for (int i = 0; i < a1.size(); i++) {
```

```
    for (int j = 0; j < a2.size(); j++) {  
        if (a1[i] == a2[j]) {  
            return a1[i]  
        }  
    }  
}
```

yes

two

## Count such pairs

-4:19:27

Edit

### Description

You are given an array A of N integers along with a target integer. Your task is to find out the number of pairs of integers present in the array whose sum is equal to the target value.

### Input

#### Input Format :

First line contains 2 integers: N and the target respectively.

Second line contains N integers which are the elements of the array.

#### Constraints :

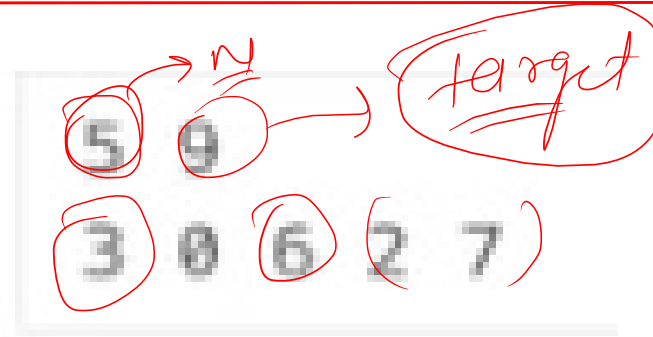
$N < 100$

### Output

Print one number which is number of such pairs.

### Sample Input 1

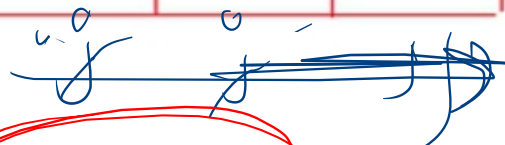
```
5 9
3 0 6 2 7
```



$(3, 6)$   $(2, 7)$  ] = 2

2

	0	1	2	3	4	
		0	0	0		
		k	l	l		
	0	1	2	3	4	n=5
a <sub>i</sub>	3	0	6	2	7	target = 9



(3, ~~0~~), (3, 6), (3, ~~2~~), (3, ~~7~~)

(~~0~~, 6), (~~0~~, ~~2~~), (~~0~~, ~~7~~)

(~~6~~, ~~2~~), (~~6~~, ~~7~~)

(2, 7)

2

## Equilibrium Element

-4:18:11

### Description

Given an array A of N positive numbers. The task is to find the position where equilibrium first occurs in the array. An equilibrium position in an array is a position such that the sum of elements before it is equal to the sum of elements after it. The valid index range is from [ 1, n-2 ] because there should be at least one element on both sides.

### Input

#### Input Format

First Line has T ( Testcases) and then for every test case we have:

- The first line contains an integer N denoting the size of the array.
- Then in the following sequence are N space-separated values of the array A.

#### Constraints:

- $1 \leq T \leq 100$
- $3 \leq N \leq 1000$
- $1 \leq A_i \leq 10^8$

### Output

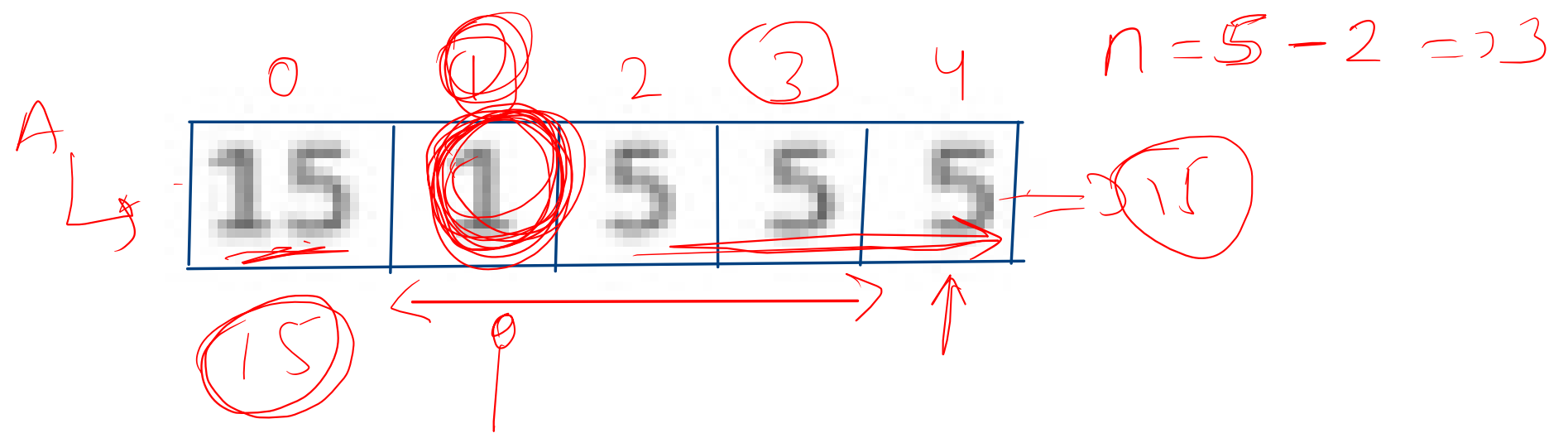
In a new line print the position at which the elements are at equilibrium if no equilibrium point exists print -1.

#### Sample Input 1

```
2
5
15 1 5 5 5
3
1 2 3
```

#### Sample Output 1

```
1
-1
```





## Equilibrium Element

4 ↗

0	1	2	3	4	5	6
6	3	7	2	4	9	9

↘

$n = 7$

$a \rightarrow$

0	1	2	3	4	5	6
6	3	7	2	4	9	9

$n = 7$

```
for(int i = 1; i < n - 2; i++) {
```

leftSum = 0

```
for(int j = i - 1; j >= 0; j--) {
```

leftSum += a[j];

rightSum = 0

```
for(int k = i + 1; k < n; k++) {
    rightSum += a[k];
```

```
    if (rightSum == leftSum) return i;
}
```

brut force

① optimal

two pointers

sliding window

2D

array

5 days

21 at 11.89