## Problem 2 – Half Sum

Nakov likes numbers. He often plays with their sums and differences. Once he invented the following game. He takes a sequence of numbers, splits them into two subsequences with the same number of elements and sums the left and right sub-sums, and compares the sub-sums. Please help him.

You are given a number **n** and **2\*n** numbers. Write a program to check whether **the sum of the first n numbers is equal to the sum of the second n numbers**. Print as result “Yes” or “No”. In case of **yes**, print also the sum. In case of **no**, print also the difference between the left and the right sums.

### Input

The input data should be read from the console.

* The first line holds an integer **n** – the count of numbers.
* Each of the next **2\*n** lines holds exactly one number.

The input data will always be valid and in the format described. There is no need to check it explicitly.

### Output

* The output must be printed on the console.
* Print “**Yes, sum=*S***” where ***S*** is the sum of the first **n** numbers in case of the sum of the first **n** numbers is equal to the sum of the second **n** numbers.
* Otherwise print “**No, diff=*D***” where ***D*** is the difference between the sum of the first **n** numbers and the sum of the second **n** numbers. ***D*** should always be a **positive number**.

### Constraints

* The number **n** is integer in range [0...500].
* All other numbers are integers in range [-500 000 ... 500 000].
* Allowed working time for your program: 0.25 seconds.
* Allowed memory: 16 MB.

### Examples

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Input** | **Output** |  | **Input** | **Output** |  | **Input** | **Output** |
| **4**  3  4  -1  -1  2  1  1  1 | Yes, sum=5 | **3**  1  2  3  1  2  2 | No, diff=1 | **2**  1  1  0  0 | No, diff=2 |