

Playground

George has $K \leq 20$ steel wires shaped in the form of half-circles, with radii a_1, a_2, \dots, a_K . They can be soldered (connected) at the ends, in any angle. Is it possible for George to make a closed shape out of these wires? He does not have to use all the wires. The wires can be combined at any angle, but may not intersect. Beware of floating point errors.

Input

Each data set consists of a number $0 < K \leq 20$ on a line by itself, followed by a line of K space-separated numbers a_i . Each number is in the range $0 < a_i < 10^7$, and has at most 3 digits after the decimal point.

The input will be terminated by a zero on a line by itself.

Output

For each test case, there should be one word on a line by itself; "YES" if it is possible to make a simple connected figure out of the given arcs, and "NO" if it isn't.

Example

Input:

```
1
4.000
2
1.000 1.000
3
1.455 2.958 4.424
7
1.230 2.577 3.411 2.968 5.301 4.398 6.777
0
```

Output:

```
NO
```

YES
NO
YES