Problem C. Ramen

Input file:	*standard input*
Output file:	*standard output*
Time limit:	1 second
Memory limit:	1024 mebibytes

Grammy likes to eat noodles. She divided a very long strip of noodle into N parts of unit length. Each part i has deliciousness a_i. She would like to fold the noodle into one piece of unit length before eating by repeating the following operation several (possibly, zero) times.

Let n be the current length of the noodle. In each operation, Grammy can choose a length ℓ such that $2\ell \leq n$ and $a_i > 0$ for all $i \leq \ell$, and fold the noodle $a_1, a_2, \ldots, a_\ell, a_{\ell+1}, \ldots, a_{2\ell}, a_{2\ell+1}, \ldots, a_n$ into $a_{\ell+1} + a_\ell, a_{\ell+2} + a_{\ell-1}, \ldots, a_{2\ell} + a_1, a_{2\ell+1}, \ldots, a_n$, where n is the length of the noodle before the operation. After the operation, the length will become $n - \ell$.

Grammy wants to know whether she can fold the noodle to length 1, can you tell her?

Input

The first line of input contains a single integer N ($1 \leq N \leq 100\,000$).

The second line contains N integers a_i ($-20\,000 \leq a_i \leq 20\,000$), representing the deliciousness of each part of the noodle.

Output

If Grammy can fold the noodle to length 1, output a single line with the word "`YES`". Otherwise, output a single line with the word "`NO`".

Examples

standard input	standard output
3 1 2 -5	YES
5 2 -5 2 3 1	NO