Problem A. Cute Panda

Input file:	*standard input*
Output file:	*standard output*
Time limit:	2 seconds
Memory limit:	512 mebibytes

There are n pandas numbered from 1 to n, i-th of them has a_i donuts. There are also n bins numbered from 1 to n, i-th of them can hold b_i donuts. For any i from 1 to n, i-th panda can distribute his donuts to i-th and ($i \bmod n + 1$)-th bin.

Can you find a way to maximize the number of distributed donuts?

Input

The input contains zero or more test cases, and is terminated by end-of-file. For each test case:

The first line contains an integer n ($3 \le n \le 10^6$).

The second line contains n integers $a_1, a_2, \ldots, a_n$ ($0 \le a_i \le 10^9$).

The third line contains n integers $b_1, b_2, \ldots, b_n$ ($0 \le b_i \le 10^9$).

It is guaranteed that the sum of all n does not exceed 10^6.

Output

For each test case, output an integer which denotes the maximum number of distributed donuts.

Example

standard input	standard output
5 8 4 8 3 10 1 0 4 5 1 5 9 4 10 0 4 3 5 2 2 1	11 13