## Travel around the world

There are N cities and N directed roads in Steven's world. The cities are numbered from 0 to $\mathrm{N}-1$. Steven can travel from city $i$ to city ( $i+1$ ) \% N, ( 0-> 1 -> 2 -> .... -> N - 1 -> 0).

Steven wants to travel around the world by car. The capacity of his car's fuel tank is $C$ gallons. There are $a[i]$ gallons he can use at the beginning of city $i$ and the car takes $b[i]$ gallons to travel from city $i$ to ( $i+$ 1) $\% N$.

How many cities can Steven start his car from so that he can travel around the world and reach the same city he started?

## Note

The fuel tank is initially empty.

## Input Format

The first line contains two integers (separated by a space): city number $N$ and capacity $C$.
The second line contains $N$ space-separated integers: $a[0], a[1], \ldots, a[N-1]$.
The third line contains $N$ space-separated integers: $\mathrm{b}[0], \mathrm{b}[1], \ldots, \mathrm{b}[\mathrm{N}-1]$.

## Constraints

$2 \leq \mathrm{N} \leq 10^{5}$
$1 \leq \mathrm{C} \leq 10^{18}$
$0 \leq \mathrm{a}[\mathrm{i}], \mathrm{b}[\mathrm{i}] \leq 10^{9}$

## Output Format

The number of cities which can be chosen as the start city.

## Sample Input

```
3 3
3 1 2
2 2
```


## Sample Output

2

## Explanation

Steven starts from city 0 , fills his car with 3 gallons of fuel, and use 2 gallons of fuel to travel to city 1. His fuel tank now has 1 gallon of fuel.
On refueling 1 gallon of fuel at city 1 , he then travels to city 2 by using 2 gallons of fuel. His fuel tank is

On refueling 2 gallon of fuel at city 2 , he then travels back to city 0 by using 2 gallons of fuel.
Here is the second possible solution.
Steven starts from city 2 , fill his car with 2 gallons, and travels to city 0.
On refueling 3 gallons of fuel from city 0 , he then travels to city 1 , and exhausts 2 gallons of fuel. His fuel tank contains 1 gallon of fuel now. He can then refuel 1 gallon of fuel at City 1, and increase his car's fuel to 2 gallons and travel to city 2.

However, Steven cannot start from city 1 , because he is given only 1 gallon of fuel, but travelling to city 2 requires 2 gallons.

Hence the answer 2.

