## Truck Tour

On a circle road there are **N** petrol pumps. Petrol pumps are numbered **0** to (**N−1**) (both inclusive). For each petrol pump you will receive **two pieces of information**:

* the **amount of petrol** that petrol pump will give
* the **distance from that petrol pump** to the next petrol pump (kilometers)

Initially, you have a tank of infinite capacity carrying no petrol. You can start the tour at **any** of the petrol pumps. Calculate the **first point** from where the truck will be able to **complete the circle**. Consider that the truck will stop at **each of the petrol pumps**. The truck will move one kilometer for each liter of the petrol.

### Input

* On the first line you will receive the **N**-numberpetrol pumps
* On the next **N**-lines you will receive the amount of petrol that petrol pump will give and the distance between that petrol pump and the next petrol pump, separated by single space

### Output

* An integer which will be **the smallest index** of the petrol pump from which you can start the tour

### Constraints

* **1 ≤ N ≤ 1000001**
* **1 ≤ Amount of petrol, Distance ≤ 1000000000**

### Examples

|  |  |
| --- | --- |
| **Input** | **Output** |
| 3  1 5  10 3  3 4 | 1 |