**[Minimum Start Value](https://www.hackerrank.com/x/tests/all/1255108/questions/222916/view" \o "Minimum Start Value)**

Start with a given array of integers and an arbitrary initial value *x*. Calculate the running sum of *x* plus each array element, from left to right. The running sum must never get below *1.*  Determine the minimum value of *x.*

**Example**

*arr = [-2, 3, 1, -5].*

If *x = 4,* the following results are obtained:

Running

sum arr[i]

----- -----

4 -2

2 3

5 1

6 -5

1

The final value is *1,* and the running sum has never dropped below *1.*  The minimum starting value for *x* is 4.

**Function Description**

Complete the function *minX* in the editor below.

minX has the following parameter(s):

*int arr[n]:*  an array of integers

Returns

    int: the minimum integer value for *x*

**Constraints**

* *1 ≤ n ≤ 105*
* *−100 ≤ arr[i] ≤ 100*

Input Format for Custom Testing

Input from stdin will be processed as follows and passed to the function.

The first line contains an integer *n*, the size of the array *arr*.

Each of the next *n* lines contains an integer *arr[i]*.

Sample Case 0

**Sample Input**

STDIN Function

----- -----

10 → arr[i] size n = 10

-5 → arr = [-5, 4, -2, 3, 1, -1, -6, -1, 0, 5]

4

-2

3

1

-1

-6

-1

0

5

**Sample Output**

8

**Explanation**

Running

sum arr[i]

----- -----

8 -5

3 4

7 -2

5 3

8 1

9 -1

8 -6

2 -1

1 0

1 5

6

The minimum starting value for *x* is *8*.

Sample Case 1

**Sample Input**

STDIN Function

----- -----

5 → arr[i] size n = 5

-5 → arr = [-5, 4, -2, 3, 1]

4

-2

3

1

**Sample Output**

6

**Explanation**

Running

sum arr[i]

----- -----

6 -5

1 4

5 -2

3 3

6 1

7

The minimum starting value for *x* is *6.*

Sample Case 2

**Sample Input**

STDIN Function

----- -----

10 → arr[i] size n = 10

-5 → arr = [-5, 4, -2, 3, 1, -1, -6, -1, 0, -5]

4

-2

3

1

-1

-6

-1

0

-5

**Sample Output**

13

**Explanation**

Running

sum arr[i]

----- -----

13 -5

8 4

12 -2

10 3

13 1

14 -1

13 -6

7 -1

6 0

6 -5

1

The minimum starting value for *x* is *13.*

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