

D. Pipe (round 1)

Input: standard input (from the keyboard)

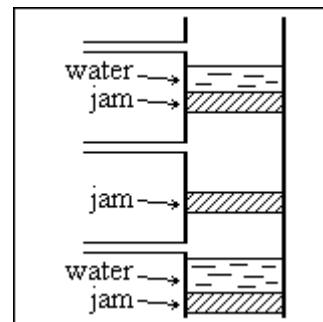
Output: standard output (to the screen)

Time limit: 1 second

Memory limit: 256 Mb

Problem

There is a legend in Kiev Polytechnic Institute, that the whole institute is supported by a unique vertical water pipe. Once upon a time some jams appeared in this pipe. On some jams a certain amount of water lies. For every jam it is known, under what mass it collapses. If a jam collapses, then all water, which lies on it, will flow down to the next jam. The most urgent is the removal of the lowest jam. For this it is possible to pour water via side pipes onto some jams in such a way, that the lowest jam will eventually collapse. Determine the minimal amount of water, which should be poured to remove the lowest jam. The construction of the pipe is shown in the picture.



Input

There is a natural number n – the quantity of jams ($n \leq 100000$), in the first line of the input. There are two integer numbers, separated by a space: m_i – the mass of water, which lies on the i -th jam, and c_i – the mass, under which the given jam collapses ($0 \leq m_i < c_i \leq 10000$), in each of the following n lines. The jams are described in the order of following from the up to the down.

Output

Output the minimal mass of water, which should be poured onto the jams to collapse the lowest jam.

Examples

Input	Output
3 7 10 0 11 10 20	4
3 7 10 0 100 10 20	10

Comment

In the first example we could pour 3 units of water onto the upper jam and 1 – to the middle one. In the second example it is more profitable to pour 10 units of water onto the lower jam.