Calvin has a job at the water works. First step is to connect a series of same-height tanks by straight pipes. Each pipe has a distance d in centimeters from the top of the tanks. Once everything is connected up, all the tanks are filled with water, and then the valve at left edge of the leftmost tank is opened and water drains. Calvin then measures the water that runs out on the floor. Calvin thinks this is a great job because of the mess it makes.

Hobbes on the other hand has taken CPSC 110, and realizes that it is possible to represent the information about chain of pipe heights as data, and then design a function that takes that data and computes the amount of water that would run out. Less mess!



Before they drain the tanks look like this:

Notice that once the water has run out, the tanks end up looking as follows. Note that not all the water runs out of the tanks. For example, in this arrangement the right three tanks only drains to the d3 level, even though the d4 and d5 pipes are lower.



Hobbes' plan for representing the tanks is as a list of distances from the top of the tanks to each pipe, in centimeters. The leftmost distance is first in the list. So for the arrangement above, the list would be (list d0 d1 d2 d3 d4 d5). Note that an arrangement can have more or fewer tanks than 6.

For simplicity you can ignore the diameter of the tanks. Design a function that computes the total number of vertical centimeters of water that drains. (Ignore the amount of water in the actual pipes.) In the above arrangement, the answer would be (+ d0 d1 d2 d3 d3 d3).

Your function MUST be called drained-centimeters. You may assume the list it is given will be at least 1 long, and that every number in the list will be greater than or equal to 0. It must produce a number.