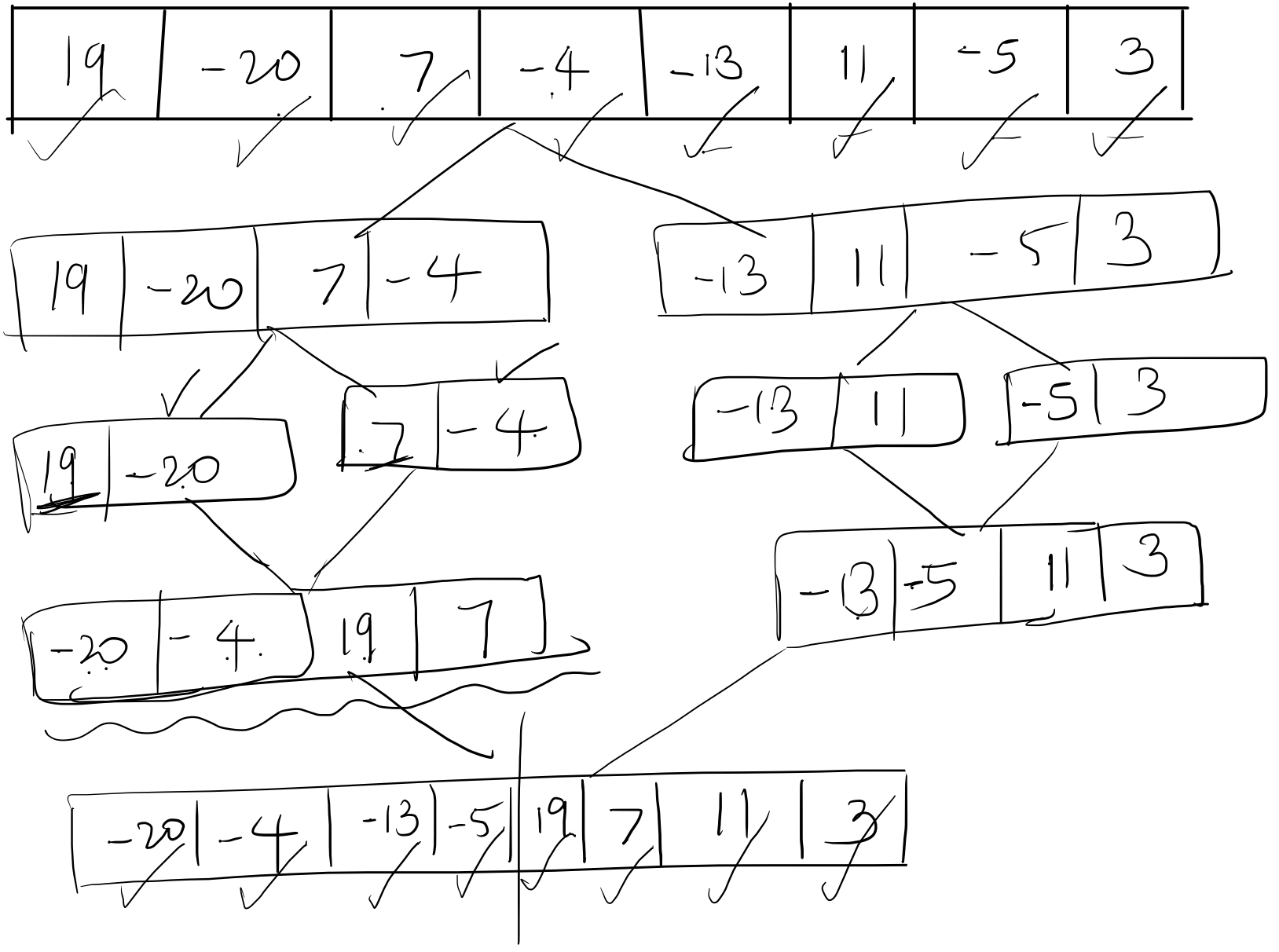
Q3. Given an array of positive and negative integers, segregate them in linear time and constant space.
The output should print all negative numbers, followed by all positive numbers. The relative order of elements must remain the same.

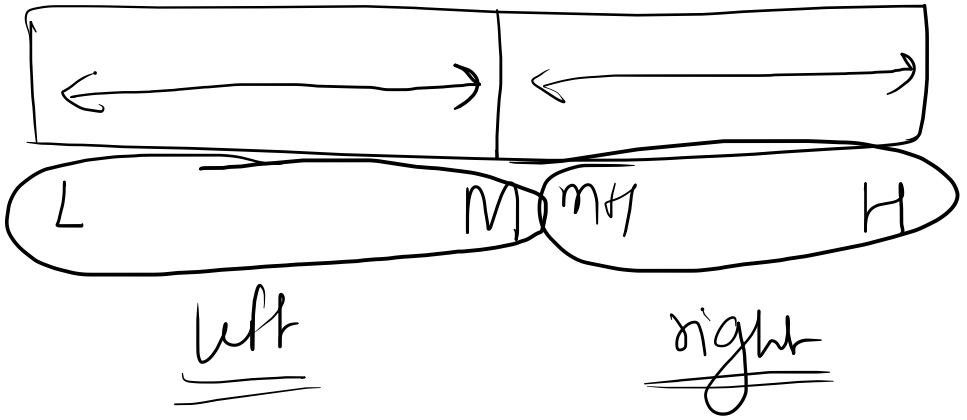
Input: arr[] = {19, -20, 7, -4, -13, 11, -5, 3}
Output: arr[] = {-20 ,-4, -13, -5, 19 ,7 ,11, 3}


19 -20 7 -4 -13 11 -5 3
19 -20 7 -4
-13 11 -5 3
19 -20
7 -4
-13 11
-5 3
-20 -4 19 7
-13 -5 11 3
-20 -4 -13 -5 19 7 11 3

-ve
① copy all the negative elements from the left
② copy all the negative elements from the right

+ve
③ copy all the positive elements from the left
④ copy all the positive elements from the right

copy back from temp → arr



$$m = \frac{L+h}{2} = l + \frac{(h-l)}{2}$$