

Problem 1

j	Action	Array contents
1	Exchange 9 with 5	5, 9, 11, 3, 2, 8, 4, 6
2	Exchange 9 with 3	5, 3, 11, 9, 2, 8, 4, 6
3	Exchange 11 with 2	5, 3, 2, 9, 11, 8, 4, 6
4	Exchange 9 with 4	5, 3, 2, 4, 11, 8, 9, 6

Resulting array is 5, 3, 2, 9, 11, 8, 4, 6

Number returned is 4

Problem 2

Bubble Sort

1 st iteration		6, 4, 5, 3, 12, 13, 2
2 nd iteration		6, 5, 4, 12, 13, 3, 2
3 rd iteration		6, 5, 12, 13, 4, 3, 2
4 th iteration		12, 13, 6, 5, 4, 3, 2
5 th iteration		13, 12, 6, 5, 4, 3, 2

Selection Sort

1 st iteration		11, 9, 5, 3, 2, 8, 4, 6
2 nd iteration		11, 9, 5, 3, 2, 8, 4, 6
3 rd iteration		11, 9, 8, 5, 3, 2, 4, 6
4 th iteration		11, 9, 8, 6, 5, 3, 2, 4
5 th iteration		11, 9, 8, 6, 5, 3, 2, 4
6 th iteration		11, 9, 8, 6, 5, 4, 3, 2
7 th iteration		11, 9, 8, 6, 5, 4, 3, 2
8 th iteration		11, 9, 8, 6, 5, 4, 3, 2

Insertion Sort

1 st iteration		9, 5, 11, 3, 2, 8, 4, 6
2 nd iteration		11, 9, 5, 3, 2, 8, 4, 6
3 rd iteration		11, 9, 5, 3, 2, 8, 4, 6
4 th iteration		11, 9, 5, 3, 2, 8, 4, 6
5 th iteration		11, 9, 8, 5, 3, 2, 4, 6

6 th iteration		11, 9, 8, 5, 4, 3, 2, 6
7 th iteration		11, 9, 8, 6, 5, 4, 3, 2

Problem 3

initialize variable to point to index of 1st positive value in array(pointLastIndex)
initialize variable to save increased index of 1st positive value in array

For loop from 0 to n-1(inclusive) of array

if value @ index is negative and pointLastIndex != 0
swap the element in index with pointLastIndex
increment pointLastIndex

if value @ index is positive and pointLastIndex == 0
set both pointLastIndex to index

Problem 4

ith	1	2	3	4	5	6	7	8	9
1 st				4					
2 nd				4			9		
3 rd		2		4			9		
4 th		2	3	4			9		
5 th		2	3	4	7		9		
6 th		2	3	4	7	8	9		
7 th	1	2	3	4	7	8	9		

Problem 5

Create output array using length of array
Create count array for the range of 0 to n-1(inclusive)

iterate through original array and increment index for each integer in original array

iterate through count array and if value @ index > 1, insert into output array