1. The list \([4, 2, 5, 6, 7, 3, 1]\) is shown below after each pass of a sorting algorithm:

\[
\begin{array}{c}
\text{unsorted} \\
[1, 2, 5, 6, 7, 3, 4] \\
[1, 2, 5, 6, 7, 3, 4] \\
[1, 2, 3, 6, 7, 5, 4] \\
[1, 2, 3, 4, 7, 5, 6] \\
[1, 2, 3, 4, 5, 7, 6] \\
[1, 2, 3, 4, 5, 6, 7] \\
[1, 2, 3, 4, 5, 6, 7]
\end{array}
\]

Which sorting algorithm is being executed?

(a) bubble sort  
(x) selection sort  
(c) insertion sort

2. The list \([4, 2, 5, 6, 7, 3, 1]\) is shown below after each pass of a sorting algorithm:

\[
\begin{array}{c}
\text{unsorted} \\
[2, 4, 5, 6, 3, 1, 7] \\
[2, 4, 5, 3, 1, 6, 7] \\
[2, 4, 3, 1, 5, 6, 7] \\
[2, 3, 1, 4, 5, 6, 7] \\
[2, 1, 3, 4, 5, 6, 7] \\
[1, 2, 3, 4, 5, 6, 7]
\end{array}
\]

Which sorting algorithm is being executed?

(a) bubble sort  
(c) selection sort  
(c) insertion sort

3. The list \([4, 2, 5, 6, 7, 3, 1]\) is shown below after each pass of a sorting algorithm:

\[
\begin{array}{c}
\text{sorted} \\
[4, 2, 5, 6, 7, 3, 1] \\
[2, 4, 5, 6, 7, 3, 1] \\
[2, 4, 5, 6, 7, 3, 1] \\
[2, 4, 5, 6, 7, 3, 1] \\
[2, 4, 5, 6, 7, 3, 1] \\
[2, 3, 4, 5, 6, 7, 1] \\
[1, 2, 3, 4, 5, 6, 7]
\end{array}
\]

Which sorting algorithm is being executed?

(a) bubble sort  
(b) selection sort  
(c) insertion sort
4. List [8, 2, 8, 7, 3, 1, 2] is being sorted using bubble sort. Fill in the blanks to show the list after each pass.

After the 1st pass: [2, 8, 7, 3, 1, 2, 8]
After the 2nd pass: [2, 7, 3, 1, 2, 8, 8]
After the 3rd pass: [2, 3, 1, 2, 7, 8, 8]
After the 4th pass: [1, 2, 3, 7, 8, 8]
After the 5th pass: [1, 2, 3, 7, 8, 8]
After the 6th pass: [1, 2, 3, 7, 8, 8]

Property of Bubble Sort:
- every value in sorted part is ≥
- every value in unsorted part can stop here.

5. List [1, 5, 8, 7, 6, 1, 7] is being sorted using selection sort. Fill in the blanks to show the list after each pass.

After the 1st pass: [1, 5, 8, 7, 6, 1, 7]
After the 2nd pass: [1, 1, 8, 7, 6, 5, 7]
After the 3rd pass: [1, 1, 5, 7, 6, 8, 7]
After the 4th pass: [1, 1, 5, 6, 7, 8, 7]
After the 5th pass: [1, 1, 5, 6, 7, 8, 7]
After the 6th pass: [1, 1, 5, 6, 7, 8, 7]
After the 7th pass: [1, 1, 5, 6, 7, 8, 7]

Similar property for sorted vs unsorted is as Bubble.

6. List [6, 8, 2, 1, 1, 9, 4] is being sorted using insertion sort. Fill in the blanks to show the list after each pass.

After the 1st pass: [6, 8, 2, 1, 1, 9, 4]
After the 2nd pass: [6, 8, 2, 1, 1, 9, 4]
After the 3rd pass: [2, 6, 8, 1, 1, 9, 4] (no change)
After the 4th pass: [1, 2, 6, 8, 1, 9, 4]
After the 5th pass: [1, 2, 6, 8, 1, 9, 4]
After the 6th pass: [1, 2, 6, 8, 1, 9, 4]
After the 7th pass: [1, 2, 6, 8, 1, 9, 4]

No property like the previous two about relationship between values in sorted vs unsorted.