Insertion Sort

1. random = [C, D, Y, X, A, Z, B]

Iteration	Sorted Part of the Array	Unsorted Part of the Array
0	[ ]	[C, D, Y, X, A, Z, B]
1	[C]	[D,Y, X, A, Z, B]
2	[C, D]	[Y, X, A, Z, B]
3	[C, D, Y]	[X, A, Z, B]
4	[C, D, X, Y]	[A, Z, B]
5	[A, C, D, X, Y]	[Z, B]
6	[A, C, D, X, Y, Z]	[B]
7	[A, B, C, D, X, Y, Z]	[ ]

2. sorted = [A, B, C, D, X, Y, Z]

Iteration	Sorted Part of the Array	Unsorted Part of the Array
0	[ ]	[A, B, C, D, X, Y, Z]
1	[A]	[B, C, D, X, Y, Z]
2	[A, B]	[C, D, X, Y, Z]
3	[A, B, C]	[D, X, Y, Z]
4	[A, B, C, D]	[X, Y, Z]
5	[A, B, C, D, X]	[Y, Z]
6	[A, B, C, D, X, Y]	[Z]
7	[A, B, C, D, X, Y, Z]	[ ]

3. reversed = [Z, Y, X, D, C, B, A]

Iteration	Sorted Part of the Array	Unsorted Part of the Array
0	[ ]	[Z, Y, X, D, C, B, A]
1	[Z]	[Y, X, D, C, B, A]
2	[Y, Z]	[X, D, C, B, A]
3	[X, Y, Z]	[D, C, B, A]
4	[D, X, Y, Z]	[C, B, A]
5	[C, D, X, Y, Z]	[B, A]
6	[B, C, D, X, Y, Z]	[A]
7	[A, B, C, D, X, Y, Z]	[ ]

Quick Sort

1. random = [C, D, Y, X, A, Z, B]

Iteration	Sorted Part of the Array	Unsorted Part of the Array
0	[ ]	[A, B, C, D, Y, X, Z]
1	[C]	[A, B, D, Y, X, Z]
2	[A, C]	[B, D, Y, X, Z]
3	[A, B, C]	[D, Y, X, Z]
4	[A, B, C, D]	[X, Y, Z]
5	[A, B, C, D, X]	[Y, Z]
6	[A, B, C, D, X, Y]	[Z]
7	[A, B, C, D, X, Y, Z]	[ ]

2. sorted = [A, B, C, D, X, Y, Z]

Iteration	Sorted Part of the Array	Unsorted Part of the Array
0	[ ]	[A, B, C, D, X, Y, Z]
1	[A]	[B, C, D, X, Y, Z]
2	[A, B]	[C, D, X, Y, Z]
3	[A, B, C]	[D, X, Y, Z]
4	[A, B, C, D]	[X, Y, Z]
5	[A, B, C, D, X]	[Y, Z]
6	[A, B, C, D, X, Y]	[Z]
7	[A, B, C, D, X, Y, Z]	[ ]

3. reversed = [Z, Y, X, D, C, B, A]

Iteration	Sorted Part of the Array	Unsorted Part of the Array
0	[ ]	[Y, X, D, C, B, A, Z]
1	[Z]	[X, D, C, B, A, Y]
2	[Y, Z]	[D, C, B, A, X]
3	[X, Y, Z]	[C, B, A, D]
4	[D, X, Y, Z]	[B, A, C]
5	[C, D, X, Y, Z]	[A, B]
6	[B, C, D, X, Y, Z]	[A]
7	[A, B, C, D, X, Y, Z]	[ ]

Cocktail Sort

1. random = [C, D, Y, X, A, Z, B]

Iteration	Output Array	Number of Swaps
0	[C, D, X, A, Y, B, Z]	3
1	[A, C, D, X, B, Y, Z]	4
2	[A, C, D, B, X, Y, Z]	1
3	[A, B, C, D, X, Y, Z]	2

2. sorted = [A, B, C, D, X, Y, Z]

Iteration	Output Array	Number of Swaps
0	[A, B, C, D, X, Y, Z]	0

3. reversed = [Z, Y, X, D, C, B, A]

Iteration	Output Array	Number of Swaps
0	[Y, X, D, C, B, A, Z]	6
1	[A, Y, X, D, C, B, Z]	5
2	[A, X, D, C, B, Y, Z]	4
3	[A, B, X, D, C, Y, Z]	3
4	[A, B, D, C, X, Y, Z]	2
5	[A, B, C, D, X, Y, Z]	1