Our Solution(s)   Run Code

Solution 1   Solution 2

```csharp
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using System.Linq;

public class Program {
  // Best: O(nlog(n)) time | O(nlog(n)) space
  // Average: O(nlog(n)) time | O(nlog(n)) space
  // Worst: O(nlog(n)) time | O(nlog(n)) space
  public static int[] MergeSort(int[] array) {
    if (array.Length <= 1) {
      return array;
    }
    int middleIdx = array.Length / 2;
    int[] leftHalf = array.Take(middleIdx).ToArray();
    int[] rightHalf = array.Skip(middleIdx).ToArray();
    return mergeSortedArrays(MergeSort(leftHalf), MergeSort(rightHalf)
  }

  public static int[] mergeSortedArrays(int[] leftHalf, int[] rightHal
    int[] sortedArray = new int[leftHalf.Length + rightHalf.Length];
    int k = 0;
    int i = 0;
    int j = 0;
    while (i < leftHalf.Length && j < rightHalf.Length) {
      if (leftHalf[i] <= rightHalf[j]) {
        sortedArray[k++] = leftHalf[i++];
      } else {
        sortedArray[k++] = rightHalf[j++];
      }
    }
    while (i < leftHalf.Length) {
      sortedArray[k++] = leftHalf[i++];
    }
```

Your Solutions   Run Code

Solution 1   Solution 2   Solution 3

```csharp
public class Program {
  public static int[] MergeSort(int[] array) {
    // Write your code here.
    return null;
  }
}
```

Our Tests

Custom Output   Submit Code

Run or submit code when you're ready.