**Problem 1.**

Asymptotic running time: O(n) + O(n2) = O(n2).

**Problem 2.**

a.

***Algorithm***: Merge(array1, array2)

***Input***: array1, array2 sorted array of elements

***Output***: newArray merge to sorted array

end1 ← array1.length - 1

end2 ← array2.length – 1

newLength ← array1.length + array2.length

while (newLength > 0 ) do

newLength ← newLength – 1

if(end2 < 0 || (end1 >= 0 && array1[end1] > array2[end2]))

newArray[newLength] ← array1[end1--]

else

newArray[newLength] ← array2[end2--]

return newArray

b. Asymptotic running time: O(n)

c. See file Problem2.java