R-4.14 Which, if any, of the following algorithms, bubble-sort, heap-sort, insertion sort, merge-sort, and quick-sort, are stable? Briefly justify your answer.

R-4.16 Is the bucket-sort algorithm in-place? Why or why not?

C-4.13 Suppose we are given two sequences A and B of n elements, possibly containing duplicates, on which a total order relation is defined. Describe an efficient algorithm for determining if A and B contain the same set of elements (possibly in different orders). What is the running time of this method?

R-5.4 Characterize each of the following recurrence equations using the master method (assuming that $T(n) = c$ for $n < d$, for constant $c > 0$ and $d \geq 1$).

a. $T(n) = 2T(n/2) + \log n$
b. $T(n) = 8T(n/2) + n^2$
c. $T(n) = 16T(n/2) + (n\log n)^4$
d. $T(n) = 7T(n/3) + n$
e. $T(n) = 9T(n/3) + (n^3\log n)$