CS577 Assignment 1

Due on Thursday 6/21

1. The following functions denote the growth rate of different algorithms. Please arrange them in the descending order. Show the necessary analysis.
    a. n^2
    b. $2^{4\log n}$
    c. $n^{2\log n}$
    d. $n (\log n)^5$
    e. 3^n

2. Let T(n) denote the running time of the worst-case of an algorithm. **Derive** the upper bound for the following cases:
    a. $T(n) = 2\ T(n/2) + c$
    b. $T(n) = 8\ T(n/2) + c$

3. Divide and Conquer Problem:

    Chapter 5, Q1 in the book (Page 246).

    Note that the data are already sorted in ascending order in both databases. You need to **show the derivation** on the computing complexity of your search algorithm.