Only 1 choice is correct for each question and there are at least 5 choices for each question (Exam will be a test)

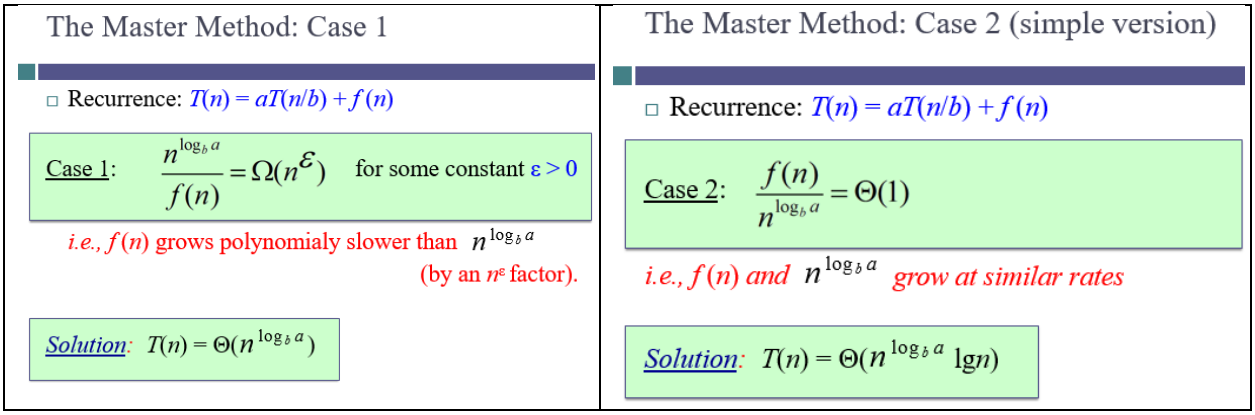
1: What is the asymptotic upper bound run time of X sort? (5pts)

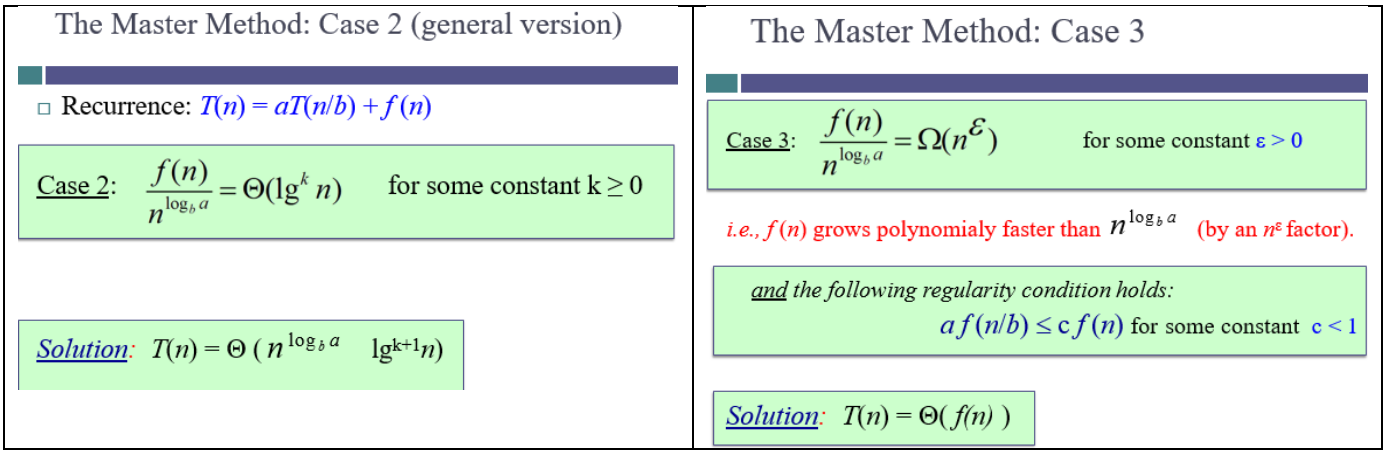
2: Which order of the asymptotic growth rates shown below is correct? (5pts)

3: For the functions, n^k and c^n which one of the below asymptotic relationships between these functions is correct? (5pts)

4: For the functions below, which one of the asymptotic relationship is correct? (5pts)

Four cases of the Master Method are shown below.





Please solve the following four questions according to the Master Method

5: What is the asymptotic notation of this function X ? (5pts)

6: What is the asymptotic notation of this function X ? (5pts)

7: What is the asymptotic notation of this function X ? (5pts)

8: What is the asymptotic notation of this function X ? (5pts)

9: What would be the running time of below pseudo code shown algorithm? (5pts)

10: How X algorithm works at each step (something similar to this) (5pts)

11: Why X algorithms are faster than Y algorithms? (5pts)

12: Which one of the attributes below is not a characteristic of recursive algorithms? (10pts)

13: Which one of the attributes below is not a characteristic of dynamic programming? (10pts)

14: Which one of the below components is not one of the component of greedy algorithms? (5pts)

15: How many vertices and edges there are in the graph below? (5pts)

16: Describe the below directed graph as Vertices and Edges list (5pts)

17. Which one of the below average run time (θ) speed order of the sorting algorithms is correct? (5pts) (A > B means A is faster than B)

18. Which one of the below algorithm run times is not solvable in polynomial-time (which one is NP) (5 pts)