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PART 1:

Question 1:

Line	Time Constant	Times Ran
1	1	1
2	1	n/7
3	1	n/7
4	1	1
Total: n/7		

Questions 2:

Line	Time C	Times Ran
1	1	1
2	1	Log(n)
3	1	Log(n)
4	1	1
Total: Log(n)		

Question 3:

Line	Time C	Times Ran
1	1	N
2	1	N^2
3	1	N^2
Total: N^2		

Part 2:

Question 1: What is T(n) of the recursive algo

T(n) = 5 * T(n – 1) + 5

Question 2: What's T(n) of the QuickSort algorithm in (1) the best case, (2) the worst case and (3) the case where the partition() algorithm always splits the input array with a 40:60 ratio

Best Case: T(n) = 2 * T(n / 2) + n

Worst Case: T(n) = T(n - 1) + n

40:60: T(n) = (T(2 * n / 5)) + (T(3 * n / 5)) + n

Question 3: Towers of Hanoi problem

T(n) = 2 * T(n - 1) + 1