Graded Assignment 2 Name: Rahul Nehere

**Part 1**

Q 1) Find the time complexity of the below functions in Θ form. Write NA if the function does not apply to any case.

a) T (n) = 3T(n/2) + n

b) T (n) = 64T(n/8) − n2(log n)

c) T (n) = 2nT(n/2) + nn

d) T (n) = 3T(n/3) + n/2

e) T (n) = 7T(n/3) + n2

**Solution:**

1. T (n) = 3T(n/2) + n

Ans: - T(n) = Θ(nlog23)

1. T (n) = 64T(n/8) − n2(log n)

Ans: - T(n) = Θ(n2log2n)

1. T (n) = 2nT(n/2) + nn

Ans: - Time complexity calculation not possible.

1. T (n) = 3T(n/3) + n/2

Ans: - T(n) = Θ(nlogn)

1. T (n) = 7T(n/3) + n2

Ans: - T(n) = Θ(n2)