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) − n^2(log n)

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

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

e) T (n) = 7T (n/3) + n^2

The final solution in the form of Θ is given below,

Anwers:

1. Θ(n^(log2{base3})
2. Θ(n^2 \*log n)
3. Θ(n^n) when n >2 , Θ(n^n \* log n) when n<=2
4. Θ(n)
5. Θ(n^2)