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

a=3, b=2,

f(n) = Θ(n^d log n ^p)

d = 1, p=0

f(n) = Θ(n)

log3 {base 2} >d 🡪 case 1

T(n) = Θ(n^log a {base b}) = Θ(n^log 3 {base 2})

Answer

T(n) = Θ(n^log 3 {base 2})

1. T (n) = 64T (n/8) − n^2(log n)

a = 64, b=8 f(n) = -n^2(log n)

Solution does not apply , f(n) is not a positive

Answer

NA

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

Does not apply , a is not constant

Answer

NA

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

a = 3 , b =3, f(n)=n/2

f(n) = Θ(n/2)

f(n) = Θ(n^log a {base b}) = Θ(n)

d = 1 , p = 0

log a {base b} = log 3 base 3 = 1 =d 🡪 case 2

T(n) = Θ(n ^ log a {base b } log n)

T(n) = Θ(n ^ 1 log n)

T(n) = Θ(n log n)

1. T (n) = 7T (n/3) + n^2

a=7 , b =3 , f(n)=n^2

d=2, p=0

log 7 base 3 < d

T(n) = Θ(n^d log n ^p)

T(n) = Θ(n^2)