3.3

2 20n 4 n!

3.8

(a) 上限是O(n) , n0> 0 , c = c1. 下限是Ω(n) ,n0 > 0 ,c =c1

(b) 上限是O(n3), n0> c3 ,c = c2 + 1. 下限是Ω(n3), n0> c3, c = c2

(c) 上限是O(n log n), n0> c5 ,c = c4 + 1. 下限是Ω(n log n), n0> c5, c = c4

(d) 上限是O(2n), n0>c7\*100,c = c6 + 1. 下限是Ω(2n), n0> c7\*100, c = c6

3.12

(a) Θ(1)

(b) Θ(n)

(c) Θ()

(d) Θ()

(e) Θ(nlogn)

(f) Θ(nlogn)

(g) Θ(logn)

(h) Θ()

(i)n为偶数情况下Θ(n),否则Θ(1)

3.14

如果n为2的幂次方,则下限为Ω(logn)

3.17

int binary(int A[], int n, int K) //size n ,value k

{

int l = -1;

int r = n; // l and r are beyond array bounds

while (l+1 != r)

{ // Stop when l and r meet

int i = (l+r)/2; // Check middle of remaining subarray

if (K < A[i])

r = i; // In left half

if (K == A[i]&&A[i-1]!=K )

return i; // Found it

if (K > A[i])

l = i; // In right half

}

return ERROR; // Search value not in A

}