$$g(n) \in O(f(n)) \longrightarrow g(n) = c(f(n))$$

3) a(go1) runs in O(nlogn) $r = a_1(n) \leq a_2(n) \leq a_3(n) \leq a_4(n) \leq a_$

ess, $\leq C_1 C_2 n^2 \log v$

az (n) < Cn2 logn

for c>0 eR

for n= n ≥ 1 ∈ Z

i, for some constant (and some n=no, algo 2 takes at most (nilogn time to my

i. algo 2 mns in O (n2 logn) time

(b)

 $3n^{2} + 5n + 2 \leq 3n^{2} + 5n^{2} + 2n^{3}$ $g(n) \leq (3+5+2)n^{3}$ $g(n) \leq 10n^{2}$ $g(n) = O(n^{2})$

assign value #1

sort list tinlogis
increment once on times; #1

assign value #1

assign value #1

assign value w/ method + login
assign value

return value

 $f_{s}(n) = n(logn + 4) + ulogn + 2$

Zalogn + 40 + 2 = (2+4+2) alogn = aloga + 4n + alogn + 2

 $\frac{3_{F}(n) \leq 8 n \log n}{2 + 4n + 2}$

ff (n)= O(nlogn)

 $O(nloyn) < O(n^2)$

f = (n) < g(n)