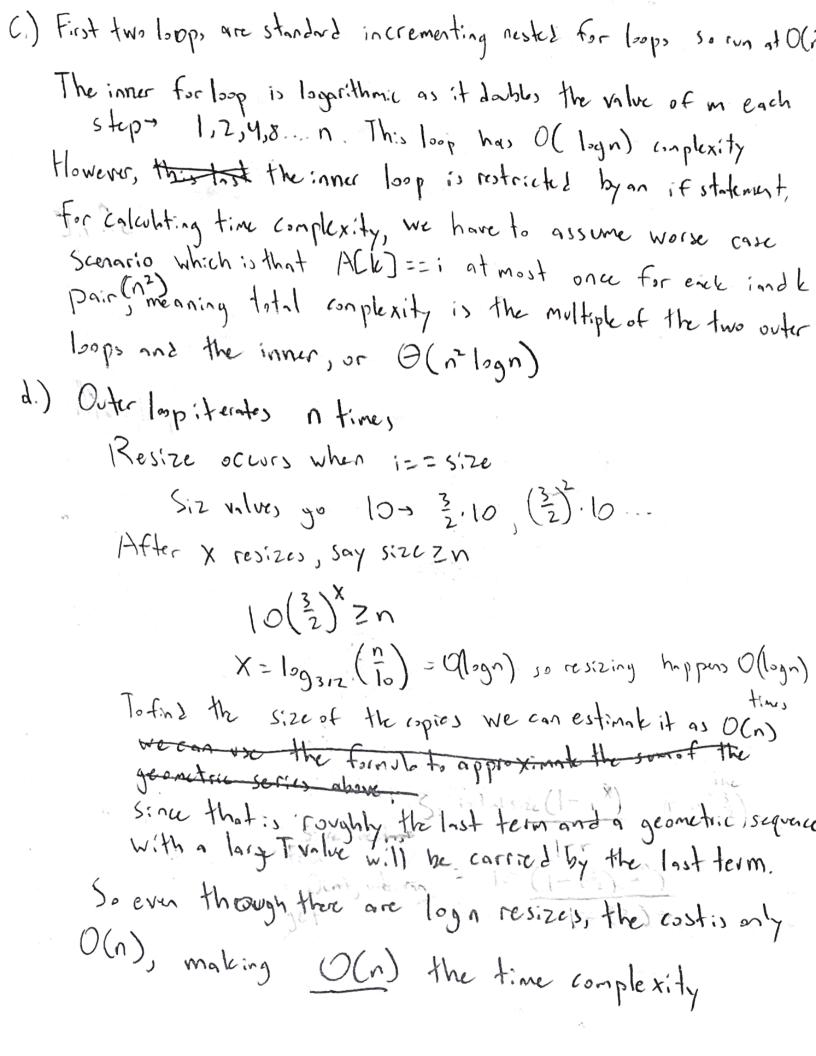
Nilliam Clark a) 1=2 at the start, loop updates i as i= 12 each loop exponential growth > 2,4,16. lafter & itentions is 1;=22 loopstops who 22'zn Take log twice 2 2 logz (n) J = logz (logz (n)) Each iteration is O(1) so total runtime is O(lalogn) 5 First loop iterates i=1 to i=n vita; increasing by 1, so n times If statement checks if i is divisible by In, so there are In of such Where of: The inner loop runs is times per; [(july & summing through invention 1n j3 n32 substitle un for k n= j=1 j3= $\Theta(k^4)$ = Sum algorithm for cubes
plug Inback in $n^{\frac{3}{2}}\sum_{j=1}^{\infty}j^{3}=\Theta(n^{2})$ $n^{\frac{3}{2}}\cdot\Theta(n^{3})=n^{3.5}=\Theta(n^{3})$



William Clark QZa) in = 1,2,3,4 in 2= 5,6 1/rc(1,5) return 1 by Hrcc (5,2) retun's Ly 1/10 (2,6) return 2 Lyllac (6,3) returns 11 rec (3,4) return 3 - Hace (4, nullptr) Final List: 175+2+673-47 nullptr Bax case 1 retvin 4 b.) in1=null ptr, in2= 2 firstifis triggered, it returns in 2 which is Final List: Z > null ptr