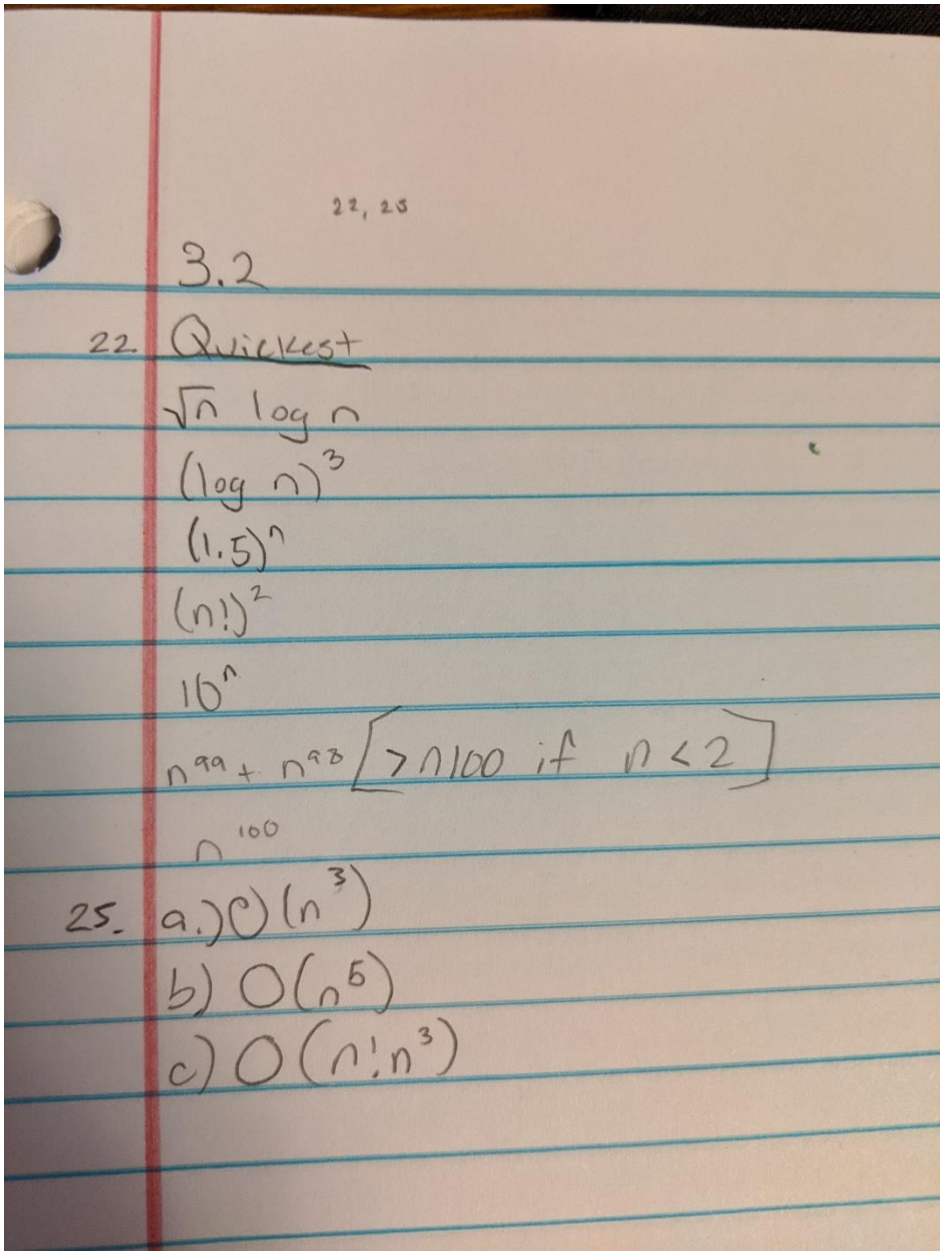
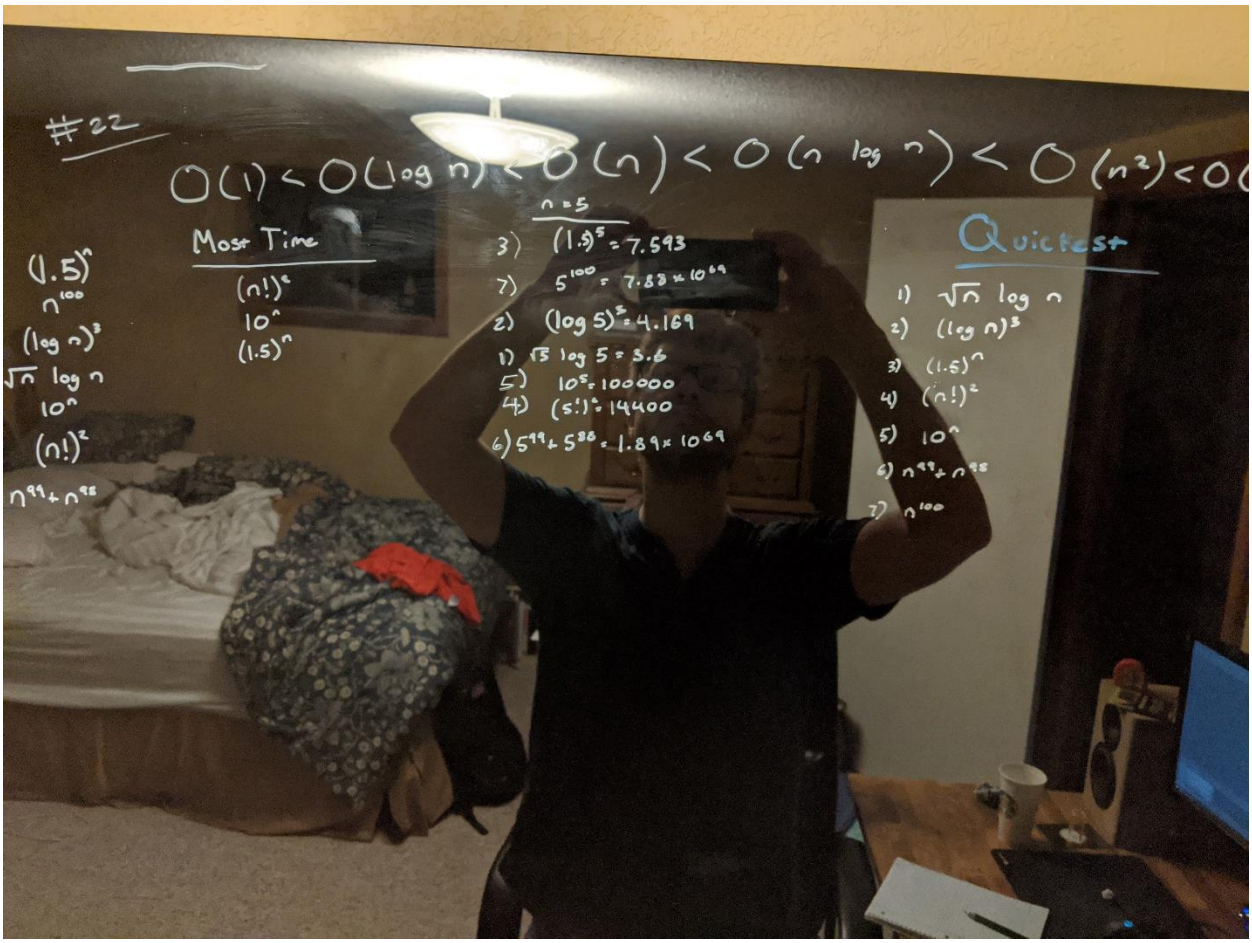
Sean Poston

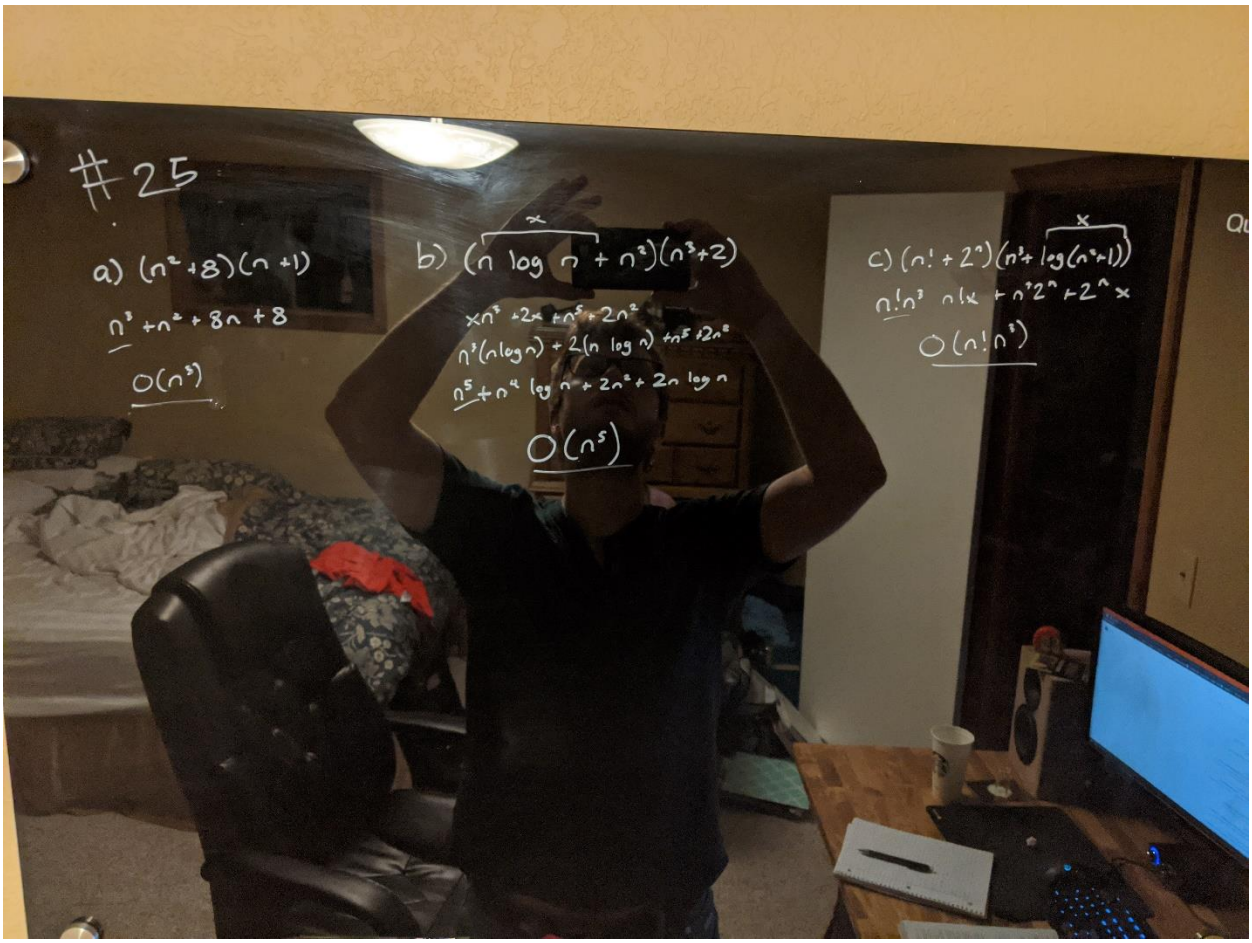
CS245

HW5

I definitely didn't realize the reflectiveness of my whiteboard, but I got a good laugh.




#22
O(1) < O(log n) < O(n) < O(n log n) < O(n²) < O(
Most Time
(n!)²
10^n
(1.5)^n
Quickest
1) √n log n
2) (log n)³
3) (1.5)^n
4) (n!)²
5) 10^n
6) n^99 + n^98
7) n^100
(1.5)^n
n^100
(log n)³
√n log n
10^n
(n!)²
n^99 + n^98
n = 5
3) (1.5)^5 = 7.593
7) 5^100 = 7.88 × 10^69
2) (log 5)³ = 4.169
1) √5 log 5 = 3.6
5) 10^5 = 100000
4) (5!)² = 14400
6) 5^99 + 5^98 = 1.89 × 10^69


#25
a) $(n^2+8)(n+1)$
n^3+n^2+8n+8
$O(n^3)$
b) $(n \log n + n^3)(n^3+2)$
$xn^3+2x+n^5+2n^2$
$n^3(n\log n)+2(n\log n)+n^5+2n^2$
$n^5+n^3\log n+2n^2+2n\log n$
$O(n^5)$
c) $(n!+2^n)(n^3+\log(n^2+1))$
$n!n^3+n!x+n^32^n+2^nx$
$O(n!n^3)$