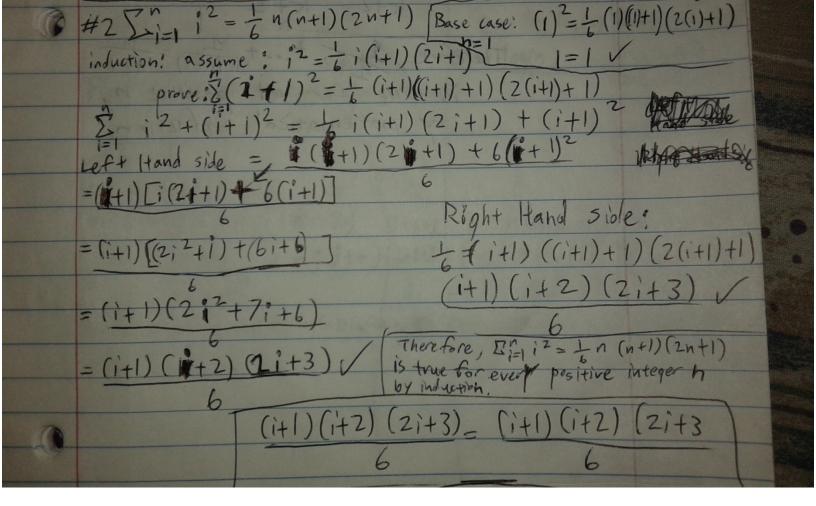
James Guan

CMSC 341

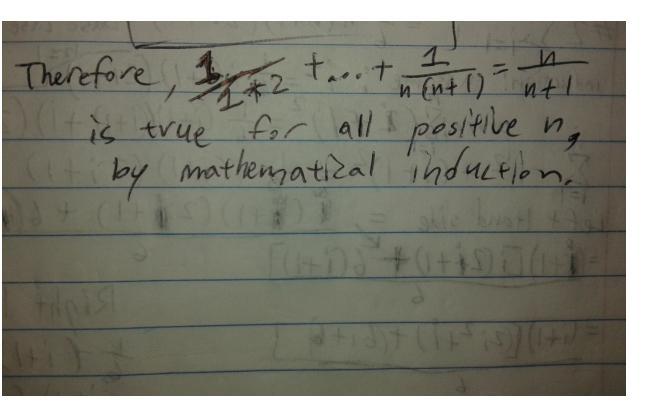
Homework 2

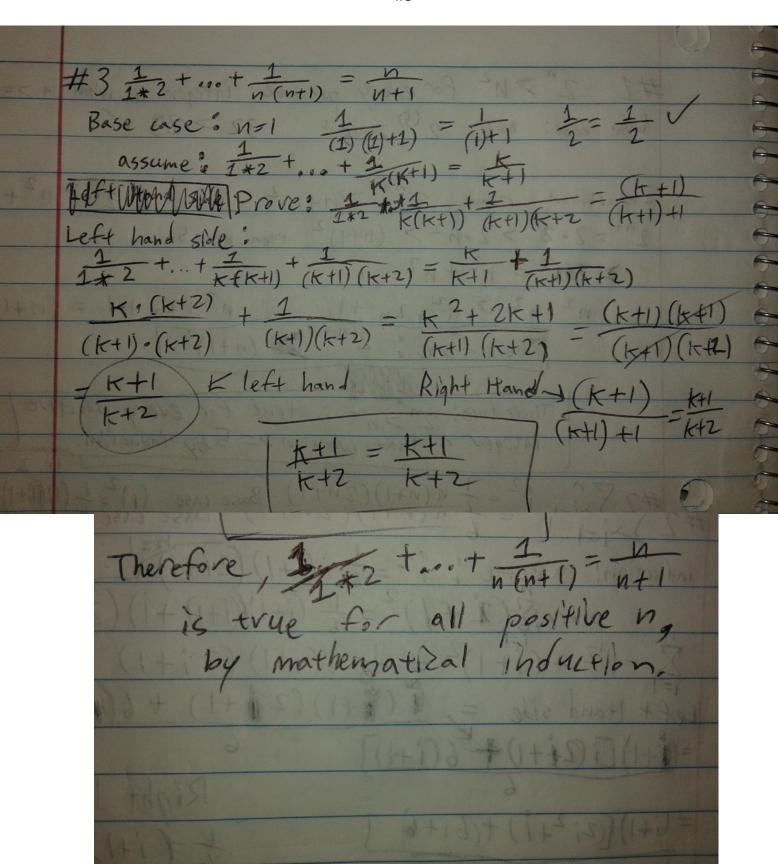
10/2/2014

#1 2">112 For every positive integer in when in == 5
#1 $2^n > n^2$ for every positive integer n when $n > 5$ Base case: $n = 5$ $2^{(5)} > (5)^2$ $32 > 25$
Induction! prove: 2(n+1)2 2.2 n > n2+2n+1
2 = 2. 2 > 2. in 2 > (n+1) 2 when 10 = 2
$2 \ln^2 = n^2 + n^2$
$n^2 + n^2 > n^2 + 2n + 1$ $n^2 + 2n + 1 = (n+1)^2$ [Therefore: $2^{(n+1)}$ $(n+1)^2$ ]
24 MACH
Therefore: 2">n2 is true for every possitive   Integer n that when n = 5 by induction.
1.2.3



#2





	Code Complexity	
	## Cost# # of times	Total
	sum = 0; 1	1
84	for (i=0; i4n; i++) (2(in+i)+2(4)+1(++) 1+2(n+1)	2n+3
TY	for (j=0; j Ln; j++) (1(j=0)+1+1) (1+2(n+1))on	[n(2n+3)
5/	ttsum; 100 1.n.n	N <sup>2</sup>
9	Final 1+2n+3+ 1 (2n+3)+n2	3n2+5n+4
	Male 2+2n+3+n+2+n+2+n+2+n+ 2n+2++2+2	0 (n2)
10		
	#5	

A COLUMN TO A STATE OF THE PARTY OF THE PART	1 0100000000000000000000000000000000000			
	I WHO WAS		70194071	
A) p. a 3	#5	applat (n) political pol	375+(2)00)+n	
0	sum = 9 /	1	1	1
	for (i= o', i Ln ; it	=1) 1+1+1	1+n+1+ 1/2+2	2+n+3
	for (j=0 /j Ln;		(1+2(n+1)). 2	3 n + 3 n
140	++ sum	1	1000 m2	y2 2
n fas	Final: 1+2+n+3	3+3+3++12	1)=0:12	n2+7h+n+4
	(m) polining		Luns ##	$O(n^2)$
	3 nlogar Hospital 4	140 m 40 pol ( 2) po	wind (a) + Sulaplant	1 mail o
10				
				A

#6	1 (0)	41 WILLIAM OF	0 (n log(n)
Sum = 0:	1	1	
for (i=0; i <n; i="2)&lt;/td"><td>1+1+2</td><td>1+n+14/09(n)+1</td><td>ntlog (h)+3</td></n;>	1+1+2	1+n+14/09(n)+1	ntlog (h)+3
for (j=0; j Ln; j+.	+) 1+1+1	(2n+3), (ag (h)	2n log(n)+3log(n)
th sum	1	1. n. log (n)	n/og(n)
Final: nlog(n)+2nlog(n)+3log(n)+lo	g(n) n+	3nlog(n)+1/og(n)+n+4	* APARTOCONANTO
			O(n log(n))
	1		

	cost, # of times Total
	#7
	5um=0; 1 1 1
ALC: NO.	for (i=0; i < n; i+t) 2+2+1 2n+3 2n+3
MARKET SERVICE	for (=0) i < i + i; i++) 1+1+1 1+ n2+1+1 n2+n+3
STREET, SQUARE, SAN	For (K=0; K < j; K++) 1+1+1 (1+ n2+1+1+1) (n4+13+3)n2=
-	for (k=0; k < j; k++) 1+1+1 (1+ n²+1+n+1) (n4+n³+3/n² = ++ sum 1-n²-n² n4
+	Final: 1+2n+3+n++++++++++++++++++++++++++++++++
Section 1	( O(n4) =
-	1 A I
	A A Marie 6
-	P ( 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1
	More Hart Cart Cart Cart Cart Cart Cart Cart C