	0 11 4 7
V	Groblem 1: True of we consider swelling
	of number of elements in an average then
	U State of the sta
	a for our loop has the second to the second
	a [n] of longthi. If we consider comparison haved
	algoritmes as an associated decision too or a Binary
	search tree then we can see that the Binary tree
>	has at least n! leaves and me depth is a (n.log(n))
1	· · · · · · · · · · · · · · · · · · ·
	men : 1 2000 1 201
1-100	men it we lansider. S = n/ men
1	Spylling Sinto 2 around " YES and
	and the adversary gives pach composison
1	on the larger value then 5 will cut down by
	size at most factor of 2 So,
1	
	A0
	Algoritm must take at least log nel comparisons
-	According to striling formula
	$\sqrt{n!} = \log n! = \log(n(n-1)(n-2)(2))$
	1 h = 2 log n dog (1 - log (n (n-1) (n-2) (2))
1000	Flogn nogn = 2 log; = 12 (n logn)
11/2 1-	[logn nlogn] = _ (n logn)
<u> </u>	
	- 2 (nlogn) is the lower bound
Niles N	

	Broblem 2:
	The second of th
12	As we know $o(g(n))$ meone that
1	there are furctions of (n)
•	4 TOTAL CONTROL OF THE CONTROL OF THE CONTROL OF THE TOTAL CONTROL OF THE CONTROL
	1 mat 0 = 27 n) 2 C 9(n) 1 m any
	positive constant C>0 and n = n
W. Comment	and was the
	and w(g(n)) is the function g(n) such that -
	0 \(\(\c_{19}(n) \) \(\f(n) \) for any \(\c > 0 \)
	a river de street à l'ann mont en me
	so me intorsection of function is such that
0 4849 - 8	0 £ c, g(n) L + (n) L c, g(n) so as
	n beignes long and that cannot be
	greator than (g(n) and loss than (g(n))
	- 1 () (X) S - C
	$O(g(n)) = \lim_{n \to \infty} \frac{f(n)}{g(n)} = 0 \qquad (g(n)) = \lim_{n \to \infty} \frac{f(n)}{g(n)} = 0$
	-309(h)
	ζ_{const} by ζ_{const}
5% a 1/3	· Cornet before bene the day not exist.
8.0	

		•	has
	i réq		
	Broblem 3.		
	1. 1. As	- 1 × 7 100	
	t = 0(9)		
	91 5 1 0 1 6	>2 0	
*		120	
	0 £ 9(h) £ 1(n £ 200 g(n)		
	f = O(9)	16 40	
A CONTRACTOR	2.	-K., 8.	
	f = Big omega(g(n))	- 2 11:15	
	too large value of n		
Szere,	0.49(n).41(n)	+ = Bigoma	a/a/n)
	3. 1 is Bigomega.(g(n)	J J	·()
		112 108 114 1 8	
M. I. I.	So, n≥o, logn > logn	1	
8	4. f = Big O(s)	labority in	
		The second secon	
	37 (1)		
	$5. \qquad f = B_{iq} \circ (g(n))$		
, ,	0.3/21, /21	The Lates	
	f = Big O(a)	V. V.	
		- 12 - 121	
		ALL YOUR	
450.W		1	

	Parohlom 4;
<u>a)</u>	As we know $f(n) = O(g(n))$ such materials the oxist of the land of the such materials
	to constants and a
	g(n) = o(f(n)) + (xy(n)) = no
	30n = 0 (20n + 14n + 1) (0)
	Son L c (2012+141+7)
	1 34 1000
,	30n = 20r + 14n + 7 (C=1
	istant all n 22 So, g(n) = 0 (t(n))
.)	a part of a pool
h)	By me definition of Bigo $f(n) = 0$ $g(n)$
	$0 \le t(n) \le cg(n)$ $n \ge 0$
	+(n)=0g(n) 12 cg(n) n2 0
5-6	$h = \sigma(2^n)$
	$n^2 Z = C \times 2^n$
	$\int_{2}^{2} \frac{1}{\sqrt{2}} \sqrt{2} \sqrt{2}$
	$n \leq 2^n \qquad n \geq 1$
	S_{0} $f(r) = 0 (g(n)) $