	Andya Chawla
	CMPS 2200 Assignment 1
	guestion 1
(0)	$2^{n+1} \in O(2^n)$
	0. 20+1
	$\lim_{n\to\infty} \frac{2^{n+1}}{2^n} = 2$
	Thus, the answer is yes since c is a constant
	greather than or equal to O.
	00%
(P)	$2^{2n} \in O(2^n)$
	$\frac{1}{n \to \infty} = \frac{2^{2n}}{2^n} = \infty$
	n→00 2n
	No because c is not a constant
	THE BELLINGE L IN THE R ESTURANCE
(0)	
(0)	$\lim_{n\to\infty} \frac{n! \cdot 0!}{\log^2 n} = \infty$ $\lim_{n\to\infty} \frac{1! \cdot 0!}{\log^2 n} = \infty$
	lin n = 00
	n→a log²n
	No because c is not a constant.
4.1	
(d)	$n^{1.01} \in \Omega \left(log^2 n \right)$
(4)	11 C 12 (Wg 11)
	$lim log_2 = 1$ $n \rightarrow \infty$ $n!o!$ $008 = 0020$
	380-300 100, 008 008 - 005C
	Yes, because c >0
(0)	5 6 5 6 0 33
(C)	Vn E O (logn)3
	$\lim_{n\to\infty} (\log n)^3 = \infty$
	N-200 VV
	No because c ≠ constant

(f) $\sqrt{n} \in \Omega (\log n)^3$ $\lim_{n\to\infty} (\log n)^3 = \infty$ (9) Prove that o(g(n)) n w (g(n)) is an empty set $\frac{o(g(n)) = \lim_{n \to \infty} f(n) = 0}{n \to \infty}$ $w(g(n)) = \lim_{n \to \infty} f(n) = \infty$ Both of these cannot be true at the same time as n > 00, thanky so f (n) does not exist. Thus o(g(n)) n w (g(n)) is an empty set. Question 2 (a) In . md file the st not term
(b) This function returns amerilars than of the fibonacci sequence by recursively adding n-1 and n-2.

	Baselier E
	guestion3 (000) CLOTE (
	(a) In .md file (1)
	(a) In ma fee
	(b) Work = 10 trusting) = 0 Nd 0N
	Span = 7 9
92 julizarini	Descone that of a (a) of a (a) of the
	Que (c) In . md file mile ((n) p) (1)
	(d) Work = 20
	Span = 18 00 = (a) t (a) = ((a) p) &
	(e) Work = 30
	2014 Span = 280 tommes 3634 to 1881
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(Local not exist. Thus elg(13) 1 solg(1)
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