Review 3

分2065350 を打ち

1. Write O if an entry is true or X otherwise.

	$O(n \lg n)$	$\Omega(n \lg n)$	$\Theta(n \lg n)$
$\lg n$	0	X	λ
n	0	Х	X
$n \lg n$	О	О	О
$n \lg^2 n$	À	0	X
n^2	X	0	У

2. Show $3n + 1 = O(n^2)$ by the definition of O.

$$3n+1 \le Cn^{2}$$

WHEN $C=4$, $\Lambda_{0}=1$
 $3n+1 \le Cn^{2}$ ($n\ge 1$)

 $3n+1 \le Cn^{2}$ ($n\ge 1$)

 $3n+1 \le Cn^{2}$

- 3. Write asymptotic notations that satisfy each relation and explain why.
- (1) Transitivity

ex> O is transitive because f(n) = O(g(n)) and g(n) = O(h(n)) implies f(n) = O(h(n)).

a is transitive because fin = argan and grin) = alkin) impires fin = alkin)

O is transitive because fin = O (gan) and qui) = O (h(n)) improves for) = O (h(n))

o is transitive because fin = o (gin) and gin) = o (hin) impires fin) = o (hin)

w is transitive because fin = w (gan) and gan) = w (han) improves for = w (han)

(2) Reflexivity

O is refrexIVE because finz Offen)

0 is reflerie because from O(fin)

Ω is where because for= Ω(for)

(3) Symmetry

0 is symmetric because for=0(800) if and only if gor)=0(for)

(4) Transpose symmetry

O and D is thomspose symmetric become fin= O(gm) it and only it

gm = 2 fm

o and w is thomspose symmetric because fin= 0 (gm) it and only it and only it