Review 3

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

	$O(n)$	$\Omega(n)$	$\Theta(n)$	$o(n)$	$\omega(n)$
$\lg n$					
n	O	O	O	X	X
$n \lg n$					
$n \lg^2 n$					
n^2					

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

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 $f(n) = O(h(n))$.

(2) Reflexivity

(3) Symmetry

(4) Transpose symmetry