Review 3

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

	$O(n\lg n)$	$\Omega(n\lg n)$	$\Theta(n\lg n)$
$\lg n$			
n			
$n\lg n$	O	O	O
$n\lg^2 n$			
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