Ex 4 Redo

Given: $f(n) = n^3 2^n$ and $g(n) = n^2 3^n$

$f(1) = 2, g(1) = 3$
$f(2) = 32, g(2) = 36$
$f(3) = 27 \cdot 8, g(3) = 9 \cdot 27$

From this we can conclude that $f(n) < g(n)\ \forall n > 0$

So, $f(n) \in O(g)$ is true but $g(n) \in O(f)$ may not be true because, we have to choose $O(f)$ such a way that $O(f) > g(n)$.

then the statement will be true

Therefore, $f(n) \in O(g)$ is true because $g(n) > f(n)\ \forall n > 0$

and ... $g(n) \in O(f)$ may be True or False because we can't know for sure.

$O(f) > g(n)$ or $O(f) < g(n)$