



CPE 11040830: Algorithms, Homework #1

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(1) For each one of the following claims, indicate whether it is true or false. If it is true, prove it.

If it is false, show a counter example.

- If $f(n)$ is $O(g(n))$ then $g(n)$ is $O(f(n))$.
- If $f_1(n)$ is $O(g_1(n))$ and $f_2(n)$ is $O(g_2(n))$, then $(f_1 \cdot f_2)(n)$ is $O(g_1(n) \cdot g_2(n))$.
- If $f(n)$ is $\Theta(g(n))$ then $g(n)$ is $\Theta(f(n))$.

- (2) CLR 3.1-2
- (3) CLR 3.1-6
- (4) CLR 3.1-7
- (5) CLR 3.2-2
- (6) CLR 3.2-3
- (7) CLR 3.2-5
- (8) CLR 3-2
- (9) CLR 3-3
- (10) CLR 3-4