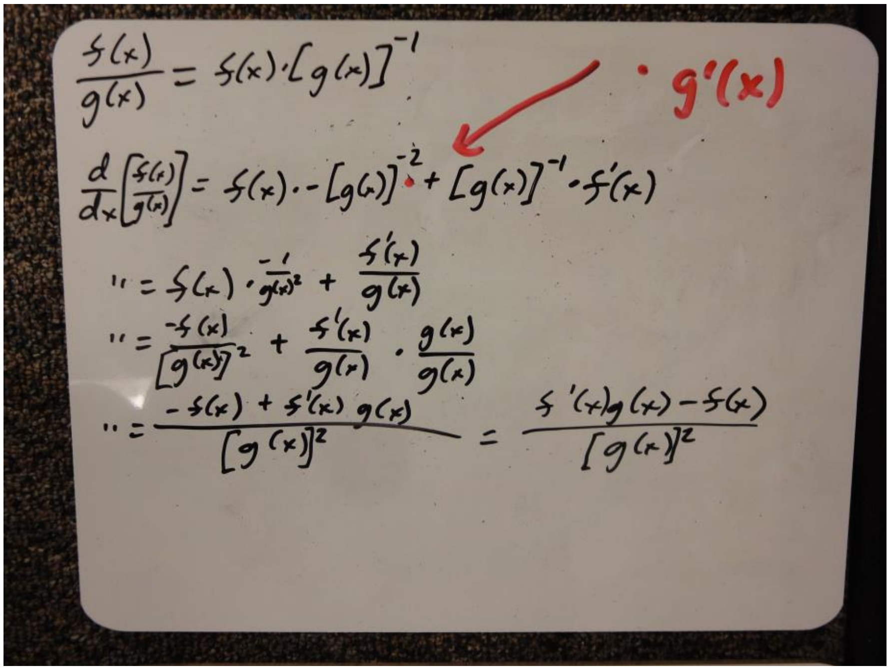
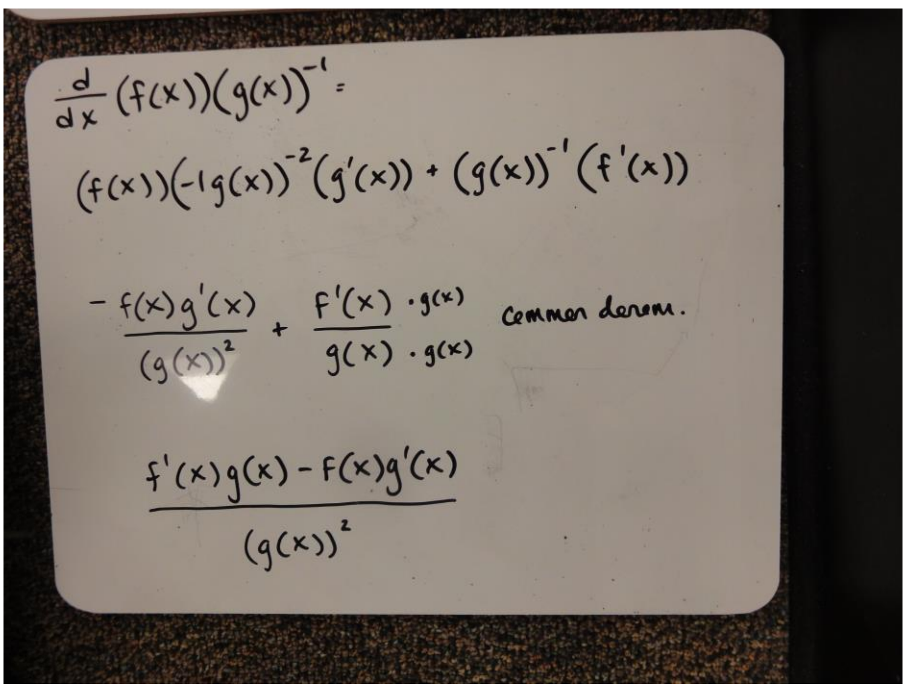
Last Chain Rule Problem:

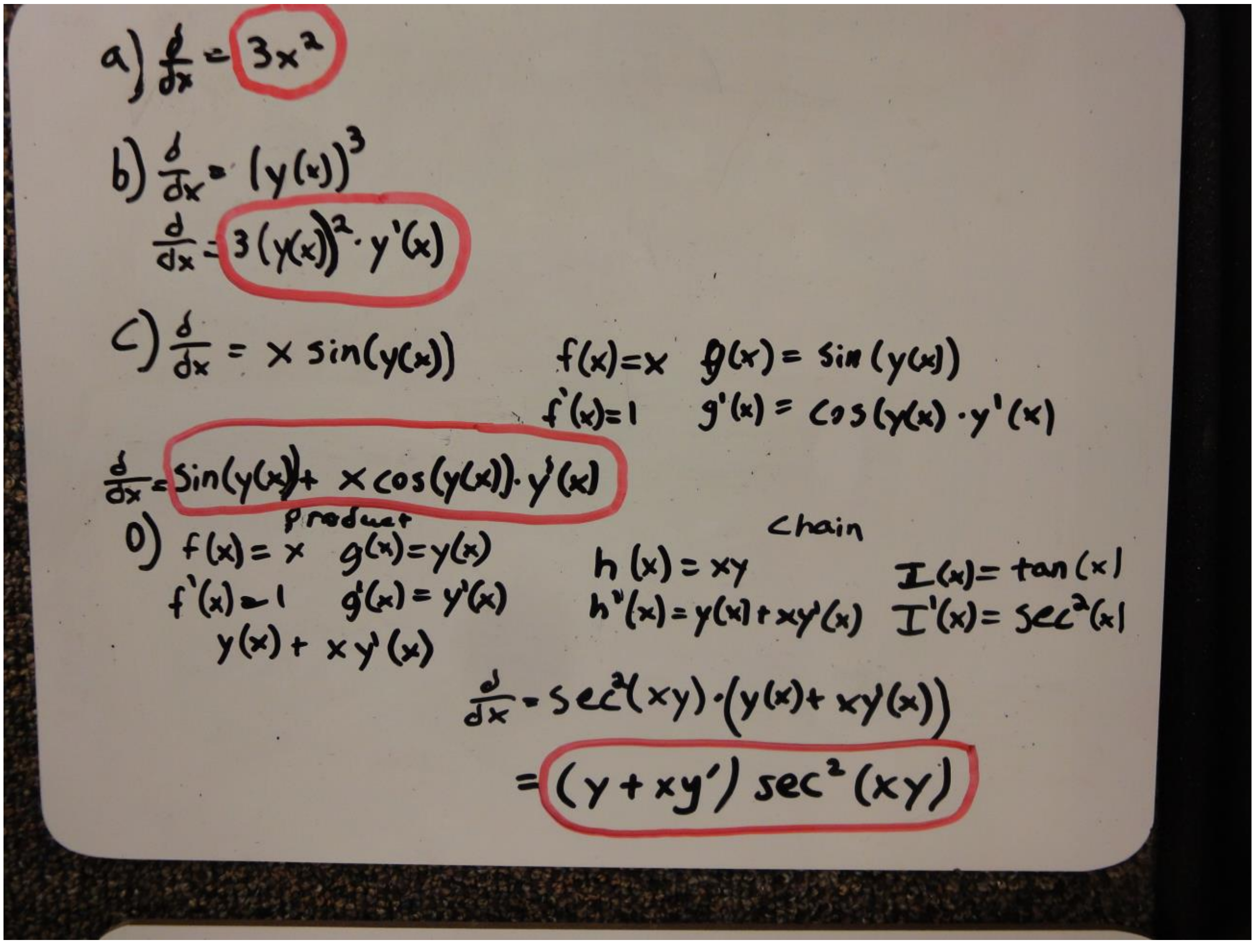


This one is sooooo close—just missed the Chain Rule.



This one is spot on. This problem illustrates the validity of the quotient rule by way of using the product (and most important—chain) rules.

Warm Up for implicit differentiation:



A brief note on notation: It is mathematically correct to write $\frac{d}{dx}\left(x^3\right) = 3x^2$ or if $y = x^3$, we can say $\frac{dy}{dx} = 3x^2$. However, it's not correct to say something like $\frac{d}{dx} = 3x^2$. This is because $\frac{d}{dx}$ is an **operator** so it must operate on *something* (usually an expression of some sort). Correct answers are circled above.