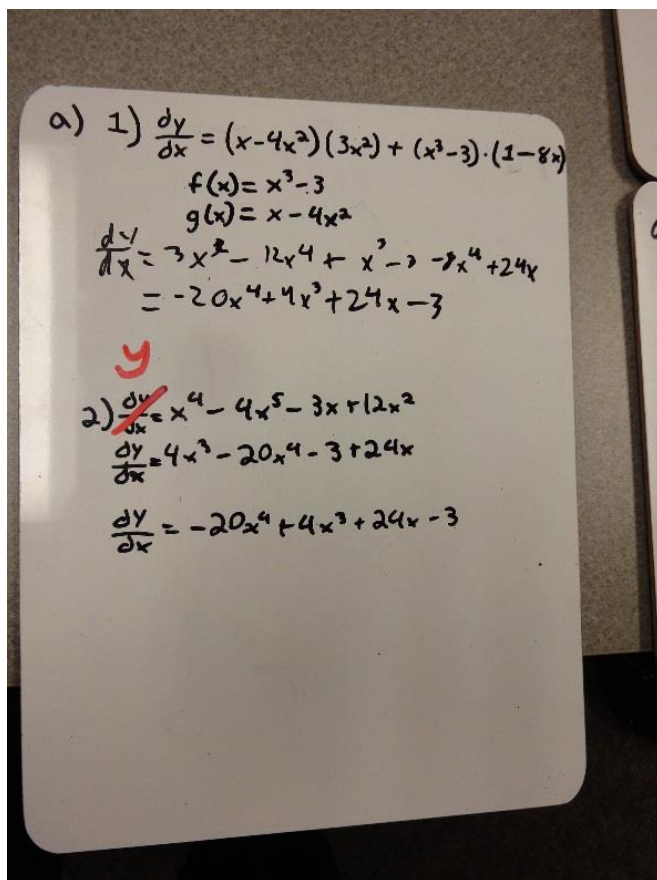
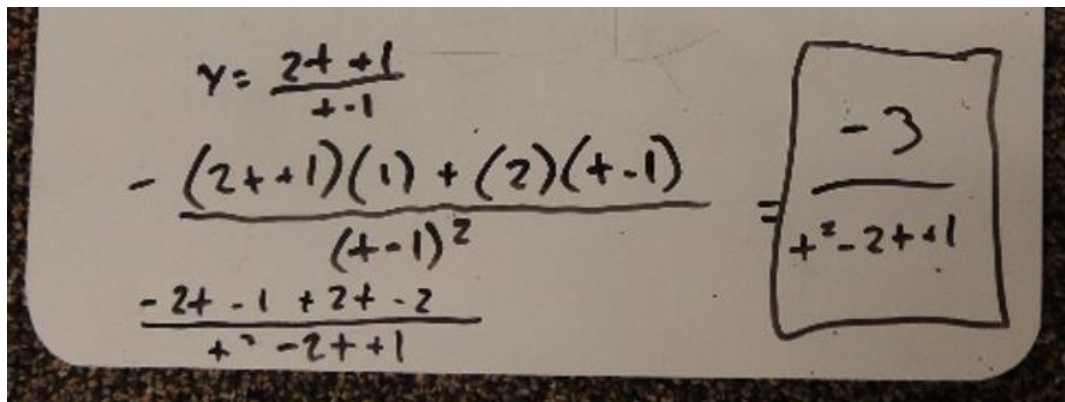


Problem 1A. Using the Product Rule (or not):

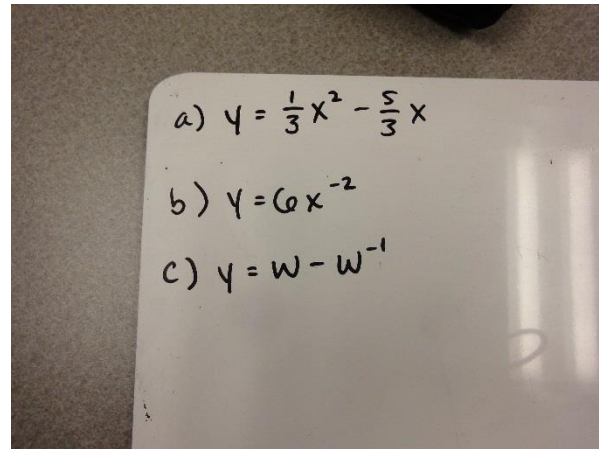
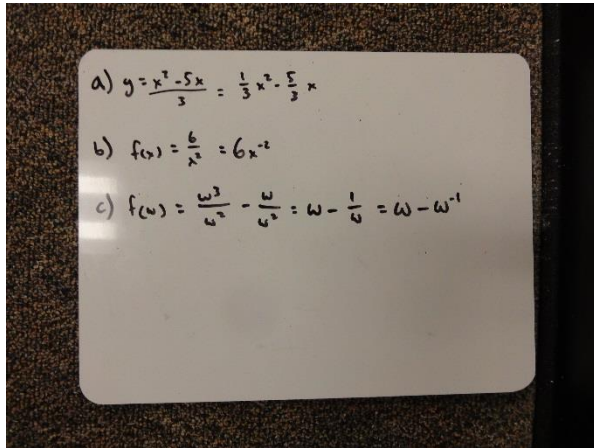


Method (1) shows the Product Rule in action (Calculus followed by algebra) whereas method (2) shows algebra followed by Calculus (using sum/difference/constant multiple/power rules).

Problem 1B. Using the Quotient Rule (see the picture for the problem $y = \frac{2t+1}{t-1}$):



Problem 2. Why is the Quotient Rule not necessary on certain problems? Quick answer: rewrite the functions so that division is no longer a prominent feature in the function (if possible).



Problem 3. How do we differentiate $y = f(x)g(x)h(x)$?

The key to using the product rule is splitting the function $f(x)g(x)h(x)$ into **two** parts (not three). Both of the boards below show the same splitting: $\underbrace{[f(x)g(x)]}_{\text{first function}} \underbrace{h(x)}_{\text{second function}}$

