3.3 Quotient Rule

Standard:
MCDIe
$\qquad$
$\qquad$
$\qquad$
$\qquad$ $-1$
This was created by Keenan Xavier Lee, 2013. See my website for more information, lee-apcalculus.weebly.com.

Let's consider the function: $\frac{f(x)}{g(x)}$.
We want to find the denvative of the function.

$$
\left(\frac{f}{g}\right)=\frac{g \cdot f^{\prime}-f \cdot g^{\prime}}{g^{2}} \longleftarrow \text { Quotient Rule }
$$

[Example 1] $y=\frac{2 x+5}{3 x-2}$. Find $y^{\prime}$

$$
\begin{aligned}
y^{\prime} & =\frac{(3 x-2)(2)-(2 x+5)(3)}{(3 x-2)^{2}} \\
& =\frac{(6 x-4)-(6 x+15)}{(3 x-2)^{2}} \\
& =\frac{6 x-4-6 x-15}{(3 x-2)^{2}} \\
& =\frac{-19}{(3 x-2)^{2}}
\end{aligned}
$$

