

3.3 Quotient Rule

Standard:

MCD1e



Let's consider the function: $\frac{f(x)}{g(x)}$.

We want to find the derivative of the function.

$$\left(\frac{f}{g}\right)' = \frac{g \cdot f' - f \cdot g'}{g^2} \quad \leftarrow \text{Quotient Rule}$$

(Example 1) $y = \frac{2x+5}{3x-2}$. Find y' .

$$y' = \frac{(3x-2)(2) - (2x+5)(3)}{(3x-2)^2}$$

$$= \frac{(6x-4) - (6x+15)}{(3x-2)^2}$$

$$= \frac{\cancel{6x} - 4 - \cancel{6x} - 15}{(3x-2)^2}$$

$$= \frac{-19}{(3x-2)^2}$$