

Quotient rule

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4:37 AM

The quotient rule is used to differentiate functions which are quotients (e.g. one function divided by another).

Cannot be reversed

$$y = \frac{5x+2}{3x-1}$$

$$u = 5x+2$$

$$v = 3x-1$$

$$u' = 5$$

$$v' = 3$$

$$y' = \frac{(3x-1) \times 5 - (5x+2) \times 3}{(3x-1)^2}$$

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

Quotient rule :

$$\text{if } y = \frac{u}{v} \text{ then } y' = \frac{v \times u' - u \times v'}{v^2}$$