7.2 Implicit Derivatives II

Wednesday, June 12, 2019 7:13 AM

* Any time you take the derivative of a y-variable, you must multiply by $\frac{dy}{dx}$

** Any term in the original polynomial with an x-variable multiplied by a y-variable will require PRODUCT RULE

ex $2x^3y + 4x = 3$

1ST 2ND

a) $\underbrace{2x^3}_{1^{ST}} \cdot \underbrace{\frac{dy}{dx}}_{D2^{ND}} + \underbrace{y}_{2^{ND}} \cdot \underbrace{6x^2}_{D1^{ST}} + 4 = 0$

b) $\frac{dy}{dx} = \frac{-4 - 6x^2y}{2x^3} = \boxed{\frac{-2 - 3x^2y}{x^3}}$

$\frac{-4}{2x^3} - \frac{6x^2y}{2x^3}$

$\boxed{\frac{-2}{x^3} - \frac{3y}{x}}$