

Lesson 5-1: Derivatives of Polynomial Functions

A quick review of the symbols that represent the derivative.

The derivative of a function $y = f(x)$ can be represented by each of the following.

Leibniz Notation: $\frac{dy}{dx}$, $\frac{d}{dx}(f(x))$

Prime Notation: $f'(x)$

For example, the derivative of $y = 3x^2$ (which can also be written as $f(x) = 3x^2$) is $6x$. All of the following statements are equivalent.

$$\begin{aligned}\frac{dy}{dx} &= 6x & f'(x) &= 6x \\ \frac{d}{dx}(f(x)) &= 6x & \frac{d}{dx}(3x^2) &= 6x\end{aligned}$$