Notations and Units.

1. Lagrange Notation

1) function f
2) first derivative f'
3) Second derivative f''
⋮
4) n-th derivative $f^{(n)}$

2. Leibnitz Notation

usually used in science area. x, y are physical quantities

$y = f(x)$

1) 1st derivative $\frac{dy}{dx} = \frac{d}{dx}(y)$
2) 2nd derivative $\frac{d^2y}{dx^2} = \frac{d}{dx}\left[\frac{d}{dx}(y)\right]$
3) n-th derivative $\frac{d^ny}{dx^n} = \frac{d}{dx}\left[\frac{d}{dx}\left[\cdots \frac{d}{dx}(y)\cdots\right]\right]$

n-th derivative of y with respect of x.

3. Units

position	x	(m)
time	t	(s)
velocity	$\frac{dx}{dt}$	(m/s)
acceleration	$\frac{d^2x}{dt^2}$	(m/s^2)

4. Name of the function Value of the function at x.

f

sin

$f \circ g$

$f(x)$

$\sin x$

$f(g(x))$.