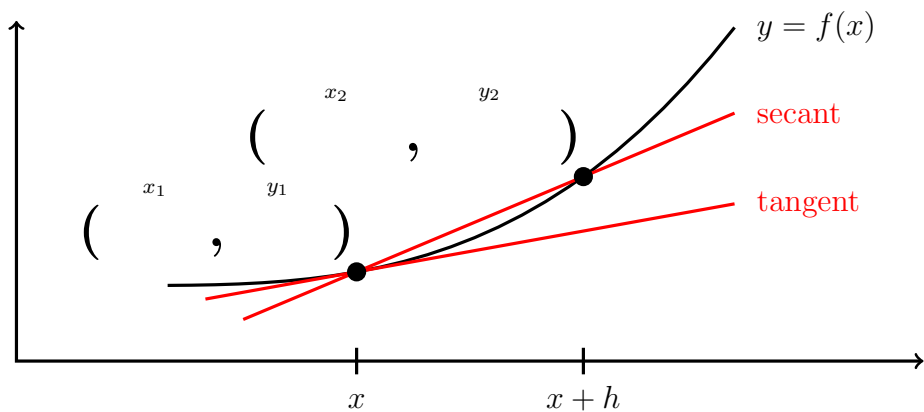


The Limit Definition of Derivative

Suppose the height of a ball is a function of time $y = f(x)$.



average velocity over $[x, x+h]$

=

average rate of change over $[x, x+h]$

=

slope of secant between $x, x+h$

=

$\frac{\Delta y}{\Delta x} = \frac{y_2 - y_1}{x_2 - x_1}$

=

=

definition of difference quotient

velocity at x

=

rate of change at x

=

slope of tangent at x

=

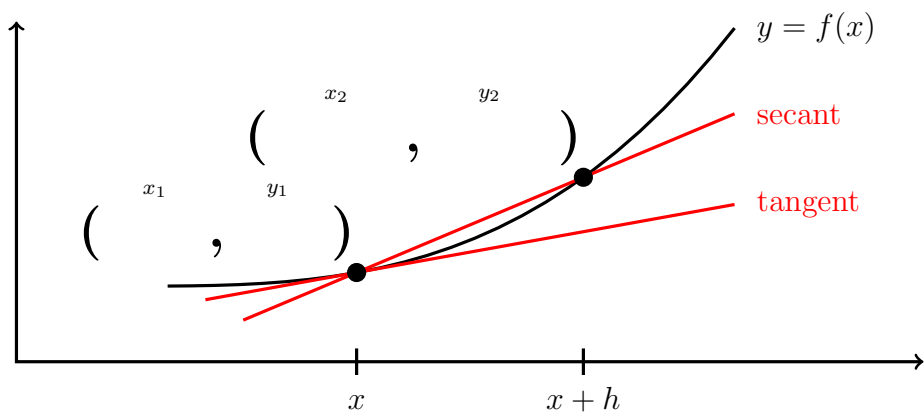
$\lim_{h \rightarrow 0}$

=

definition of derivative $f'(x)$

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