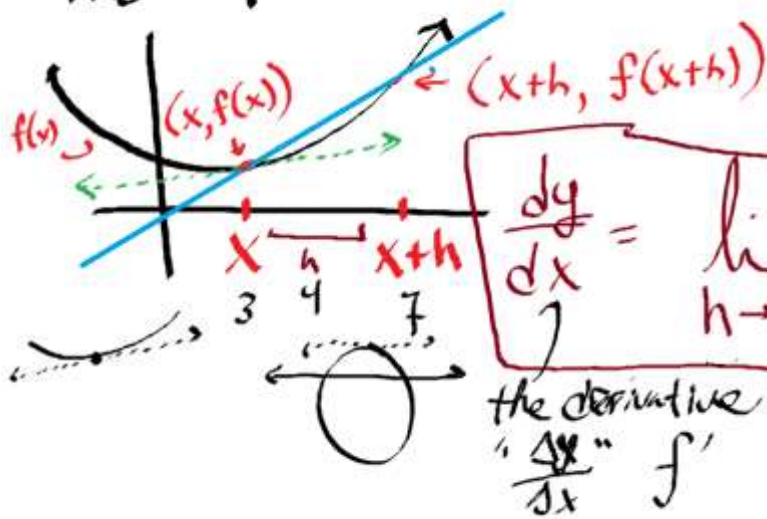


The Slope of a Curve



$$\frac{\Delta y}{\Delta x} = \frac{f(x+h) - f(x)}{x+h - x}$$

$$\frac{dy}{dx} = \lim_{h \rightarrow 0} \frac{f(x+h) - f(x)}{h}$$

$$y = x^2$$

find the slope of this curve.
@ $x=3$.



$$\lim_{h \rightarrow 0} \frac{f(x+h) - f(x)}{h}$$

$$\lim_{h \rightarrow 0} \frac{(x+h)(x+h) - x^2}{h}$$

$$\frac{(x+h)^2 - x^2}{h}$$

$$\lim_{h \rightarrow 0} \frac{x^2 + 2hx + h^2 - x^2}{h}$$

$$\lim_{h \rightarrow 0} \frac{2hx + h^2}{h} \Rightarrow \lim_{h \rightarrow 0} \frac{h(2x+h)}{h}$$

$$\lim_{h \rightarrow 0} 2x + h = 2x$$

$$\boxed{m=6}$$