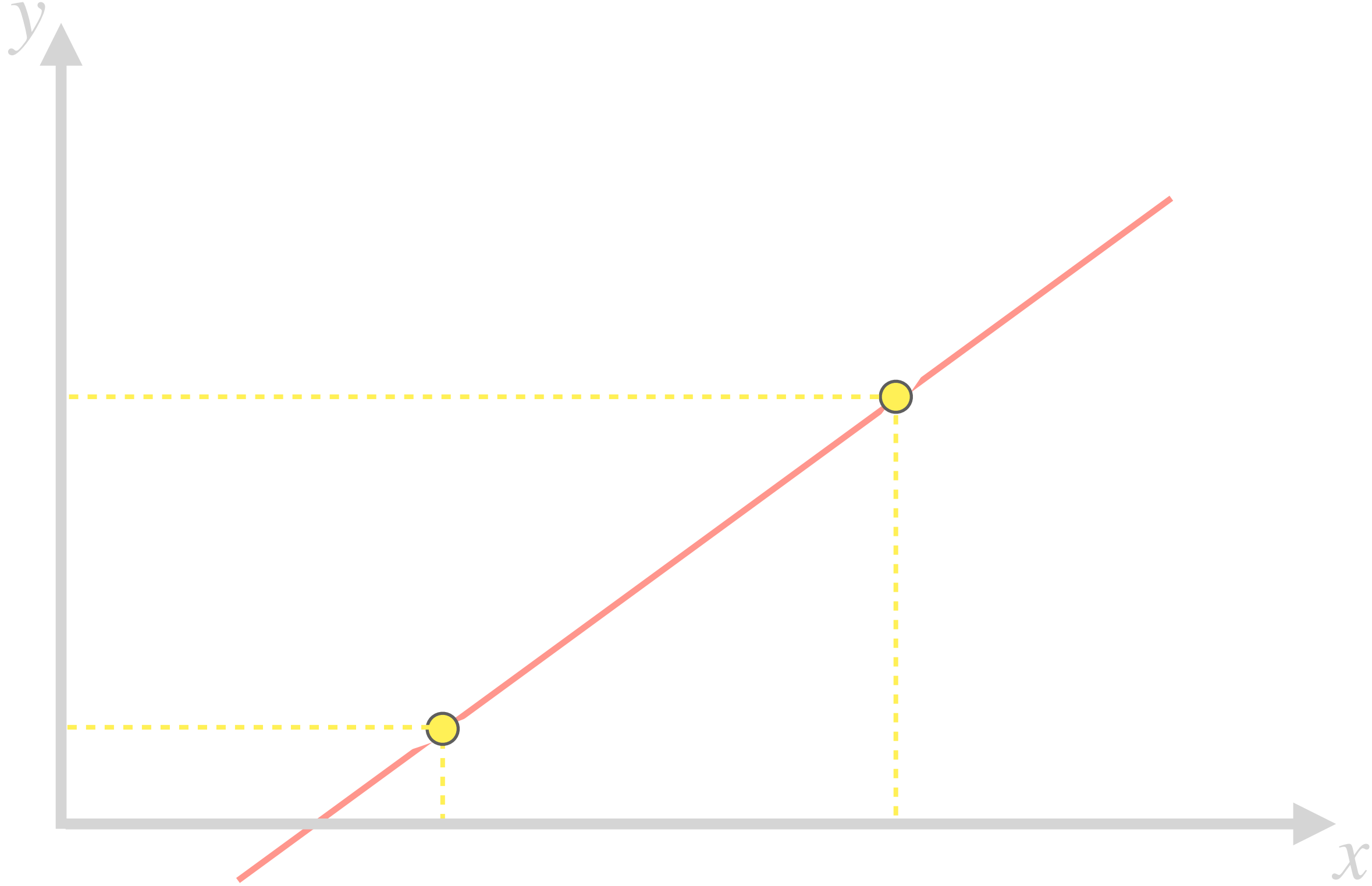


let's generalize



secant

let's generalize

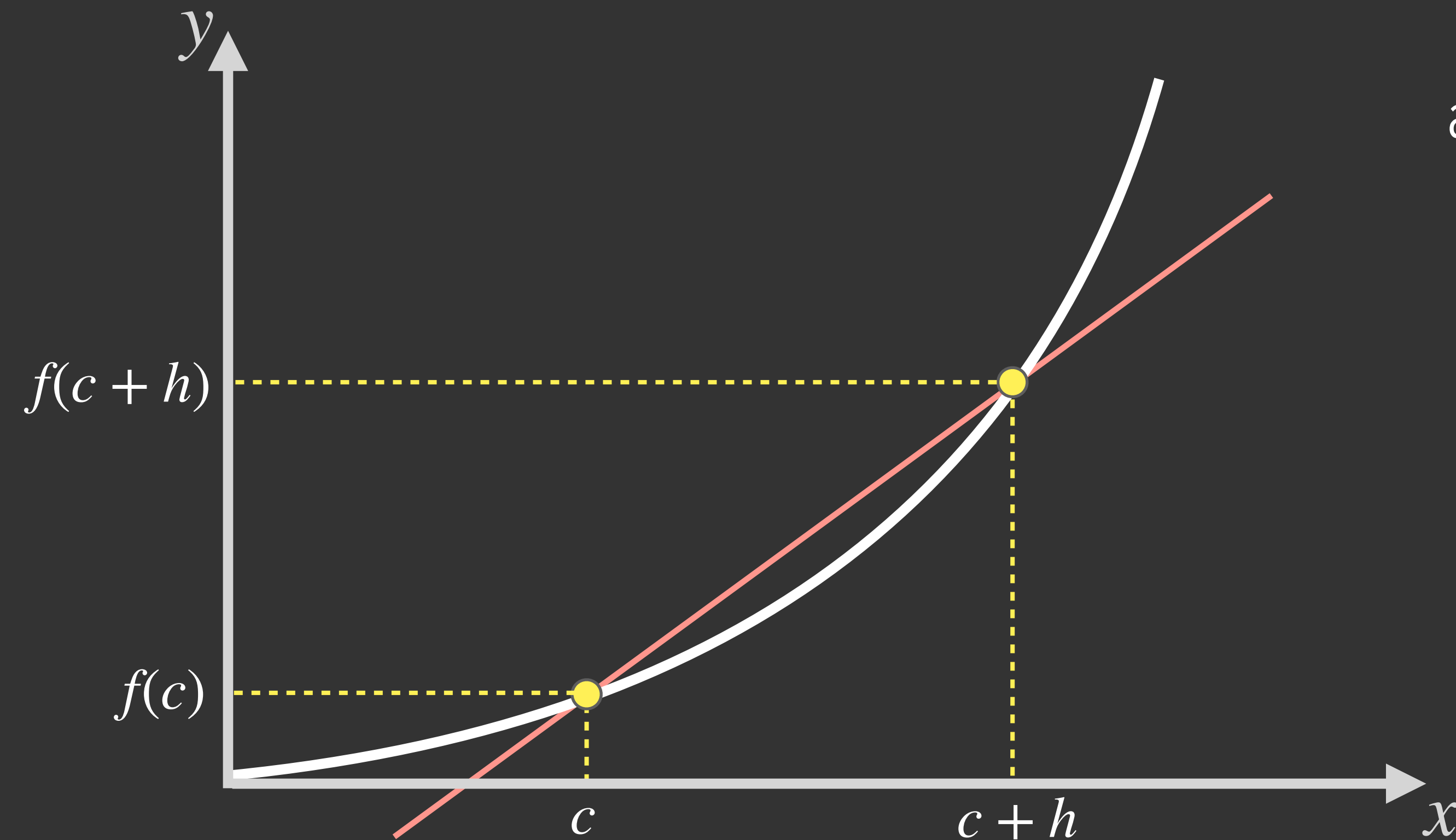
geometrically, we calculate the slope of the **secant** joining points on the curve:

$$\frac{\text{change in } f}{\text{change in } x} = \frac{f(c+h) - f(c)}{(c+h) - c} = \frac{f(c+h) - f(c)}{h}$$

and examine what happens as h approaches 0

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

in the hopes that the slope of the secant will approach the slope of the tangent line



derivative of a function