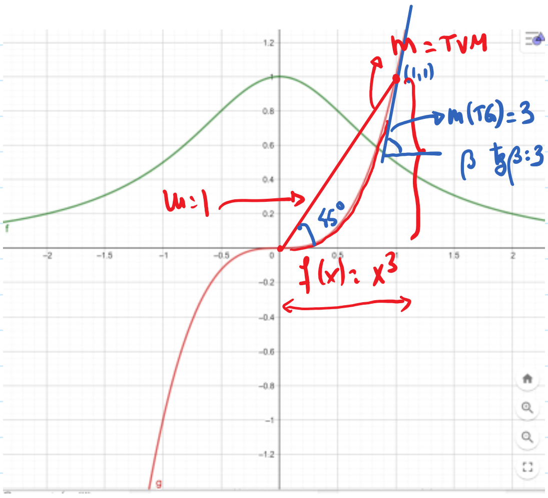



TVM ~ f' en inter

TVI

$TVM[0,1] = \frac{1-0}{1} = \boxed{1}$

$\underline{TVI(1) = f'(1) = 3}$

$\underline{f(x) : x^3}$ $\underline{f'(x) : 3x^2}$

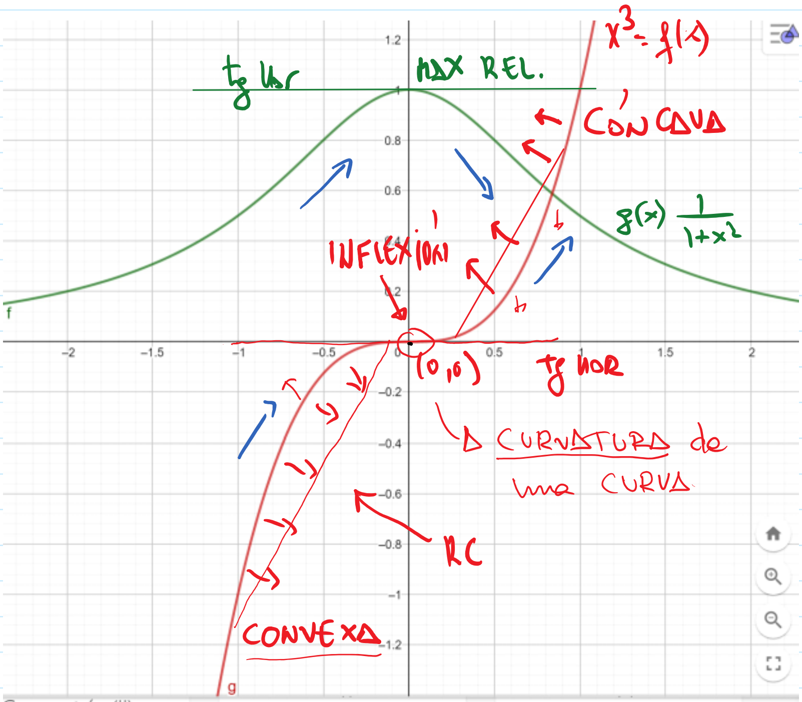
$f'(1) = 3$

$$TVI = \lim_{h \to 0} \underbrace{TVM[1, 1+h]}_{} = \lim_{h \to 0} \frac{f(1+h) - f(1)}{h} = \boxed{3}$$

$$\frac{f(1+h)-f(1)}{h} = f'(1)$$

h

1 1+h




$g(x) : \frac{1}{1+x^2}$

$g'(x) : \frac{-2x}{1+x^2}$

$g'(0) : 0$

$f(x) : x^3$

$f'(x) : 3x^2$

$f'(0) : 0$

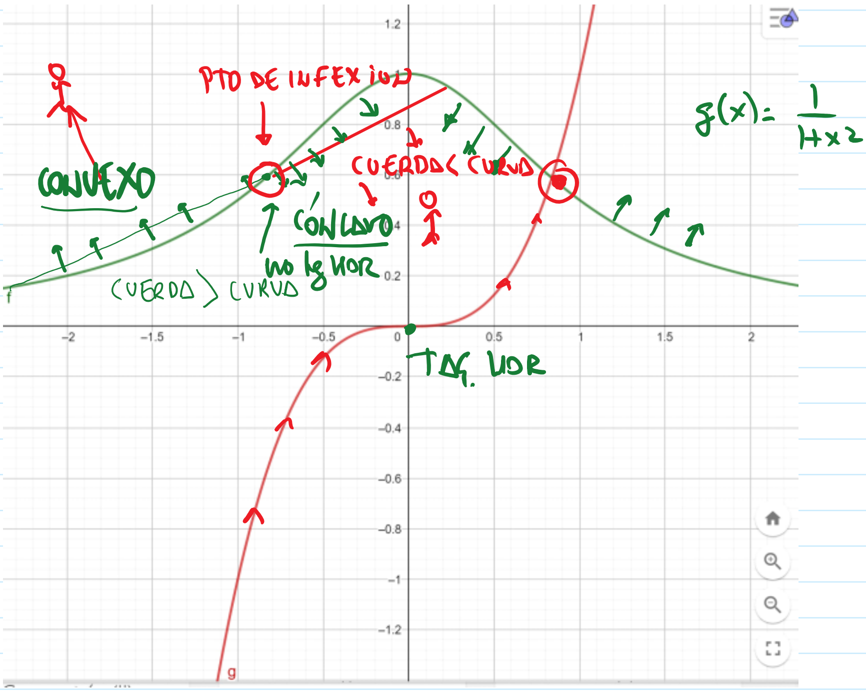
tg (0,0) HOR.

$g(x) : \frac{1}{1+x^2}$ —▷ COCIENTE

$$g'(x) : \frac{\overset{=0}{(1)'}(1+x^2) - 1 \cdot 2x}{(1+x^2)^2} = \boxed{\frac{-2x}{(1+x^2)^2}}$$

1 d – f'(x)

$$\frac{1}{f(x)} \xrightarrow{d} \frac{-f'(x)}{f^2(x)}$$




$g(x) = \underbrace{\frac{1}{1+x^2}}_{x=0 \text{ MAX}}$ $\qquad g'(x) = \frac{-2x}{(1+x^2)^2}$

$g'(x) = 0$ CRÍTICO $\qquad$ POSIBLE MAX/min

$$\frac{-2x}{(1+x^2)^2} = 0 \Rightarrow -2x = 0 \Rightarrow \boxed{x=0}$$

$f(x) = \underbrace{x^3}_{x=0 \text{ NO hay MAX/min}}$ $\qquad f'(x) = 3x^2 \qquad f'(x) = 0 \qquad \boxed{x=0}$

POSIBLE MAX/min

$$g'(x) = \frac{-2x}{(1+x^2)^2} \qquad \frac{}{+}$$

$\ominus$ $x>0$

$\oplus$ $x<0$

SIGNO $g'$

$\mathbb{R}$

$-1 \qquad 0 \qquad 1$

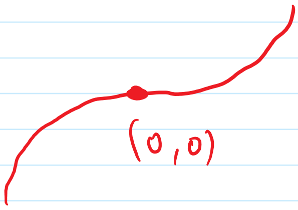
$g'(-1) > 0 \qquad g'(1) < 0$

$x = 0$ MÁXIMO

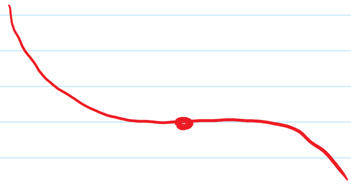
$g = \frac{1}{1+x^2}$ CRECIENTE $(-\infty, 0)$

DECRECIENTE $(0, +\infty)$

$f(x) = x^3$ $\quad f'(x) = 3x^2 \geq 0 \quad$ f ES CRECIENTE $\mathbb{R}$




no max/min



$g(x) = \frac{1}{1+x^2} \qquad g'(x) = \frac{-2x}{(1+x^2)^2} \xrightarrow{d} \boxed{g''(x) = 0}$

Ptos inflexión

$\frac{-2x}{(1+x^2)^2} \xrightarrow{d} \boxed{\quad} = 0 \Rightarrow$