

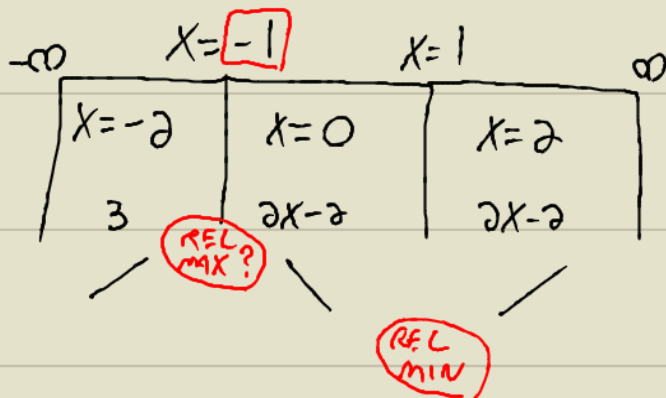
$$11. f(x) = \begin{cases} 3x-1, & x \leq -1 \\ x^2-2x, & x > -1 \end{cases}$$

$$① f'(x) = \begin{cases} 3, & x \leq -1 \\ 2x-2, & x > -1 \end{cases}$$

$$② \begin{aligned} 3 &= 0 & 2x-2 &= 0 & x &= -1 \\ & & 2x &= 2 & & \\ & & x &= 1 & & \end{aligned}$$

INC $(-\infty, -1)$
 DEC $(-1, 1)$
 INC $(1, \infty)$

③



$$\begin{array}{cc} x = -1 & x = -1 \\ 3x-1 & x^2-2x \\ 3(-1)-1 & (-1)^2-2(-1) \\ -4 & 3 \end{array}$$

④

REL MIN : $x = 1$

$$y = x^2 - 2x$$

$$y = 1^2 - 2(1)$$

$$y = -1$$

REL MIN : $(1, -1)$