

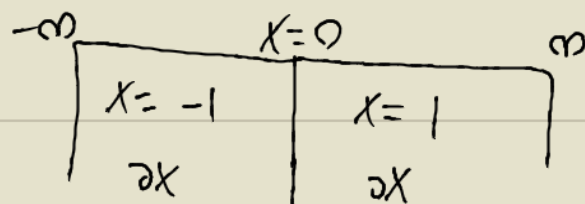
$$12. f(x) = 5^{x^2-1}$$

$$\frac{d}{dx} [a^u] = (\ln a) a^u \cdot u'$$

$$\begin{aligned} \textcircled{1} f'(x) &= (\ln 5) 5^{x^2-1} \cdot \frac{d}{dx} (x^2-1) \\ &= (\ln 5) 5^{x^2-1} \cdot 2x \end{aligned}$$

$$\begin{aligned} \textcircled{2} 5^{x^2-1} &= 0 & 2x &= 0 \\ \ln 5^{x^2-1} &= \ln 0 & \textcircled{x=0} & \end{aligned}$$

③



REL  
MIN

DEC  $(-\infty, 0)$   
INC  $(0, \infty)$

④

REL  
MIN :  $x=0$

$$y = 5^{x^2-1}$$

$$y = 5^{0^2-1}$$

$$y = 5^{-1}$$

$$y = \frac{1}{5}$$

REL  
MIN :  $(0, \frac{1}{5})$