

0.10.16
Bewertung: 200

$$f(-u) \rightarrow u \cdot f(u) = r|u| + 1 \quad |u| = |-u|$$

(1)

$$\rightarrow u \rightarrow (f(-u) - u \cdot f(u) = r|u| + 1)u \rightarrow -u f(-u) + u^r f(u) = -r|u| - u$$

$$\rightarrow -u \rightarrow f(u) + u \cdot f(-u) = r|u| + 1$$

$$\rightarrow u^r f(u) + f(u) = -r|u| - u$$

$$f(u) = \frac{-r|u| - u}{u^r + 1}$$

$$f(u) + f(u)^r = u^r - ru + r$$

$$u=0 \rightarrow r f(0) = r \rightarrow f(0) = 1$$

$$u^r = t \rightarrow u = \sqrt[r]{t}$$

$$f(t) = \frac{t^r - \sqrt[r]{t} + r}{t^r + 1}$$

$$y = \frac{u^r + u + r}{u - 1}$$

$$\rightarrow yu - y = u^r + u + r \rightarrow u^r + u(1-y) + r + y$$

$$u \rightarrow \frac{-b \pm \sqrt{\Delta}}{2a}$$

$$u = \frac{-(1-y) \pm \sqrt{(1-y)^2 - r(r+y)}}{r} \rightarrow \Delta \geq 0$$

$$y^2 - ry - r - ry \geq 0 \rightarrow y^2 - 2ry - r \geq 0 \rightarrow (y-r)(y+1) \geq 0$$

$$\frac{-1}{r+1} \leq y \leq \frac{r}{r+1}$$

$$\mathcal{K} = (-\infty, -1] \cup [r, +\infty)$$

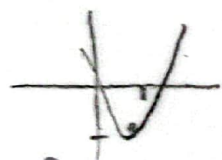
$$\frac{(1-y) \pm \sqrt{(1-y)^2 - 4(1+y)}}{2} \rightarrow \Delta \rightarrow$$

$$1+y^2-2y-1-4y \geq 0 \rightarrow y^2-4y-2 \geq 0 \rightarrow (y-2)(y+1) \geq 0$$

$$K = (-\infty, -1] \cup [2, +\infty)$$

1) $y = 2x^2 - 2x + 1 \rightarrow \text{out} / \frac{\omega}{\lambda}$

$$2x \times \frac{2\omega}{1\lambda} - \frac{2\omega}{\lambda} + \frac{\omega}{\lambda} \rightarrow \frac{2\omega}{\lambda} - \frac{\omega}{\lambda} \Rightarrow \frac{\omega}{\lambda}$$



$$K = [-\frac{1}{\lambda}, +\infty)$$

2

2) $\sqrt{-x^2 + 2x - 2} \rightarrow \text{out} / \frac{-y}{-y} \Rightarrow K$

$$-9 + 4x - 2 \Rightarrow \frac{-9 + 4x - 2}{9} \Rightarrow \frac{-11 + 4x}{9}$$



$$K = [0, 1]$$

3) $\sqrt{x^2 - 4x^2 + 2x + 1}$

$$K = [0, +\infty)$$

4) $\sqrt{x^2 - 4x^2 + 2x + 1}$

$$K = (-\infty, +\infty)$$

1) $y = \frac{x^2+1}{x^2-4} \rightarrow x = \left\{ \frac{x}{r} \right\} \rightarrow y = \sqrt{\frac{x^2+1}{x^2-4}} \quad D = [0, +\infty) - \{2\}$

2) $\frac{x^2+1}{\sqrt{x^2+1}} \quad D = \left[\frac{x}{\sqrt{x^2+1}}, +\infty \right)$

3) $y = x^2 + \frac{1}{x^2+1} \quad D = \left[\frac{1}{2}, +\infty \right)$

4) $y = \frac{x^2+1}{x^2-1} \xrightarrow{\text{division}} yx^2 - y = x^2 + 1 \rightarrow x^2(y-1) = x^2 + 1 \rightarrow x = \sqrt{\frac{x+1}{y-1}}$

$D = (-\infty, -1] \cup (1, +\infty)$

5) $y = -1 \leftarrow x^2 = 0$
 $(-\infty, -1) \leftarrow y = -\infty \leftarrow x^2 \rightarrow +\infty$
 $(1, +\infty) \leftarrow y \rightarrow +\infty \leftarrow x^2 \rightarrow +\infty$

6) $D = (-\infty, -1] \cup (1, +\infty)$

7) $f(x) = \frac{x \sin x + 1}{x^2 - 1} \rightarrow \sin x = 1 \rightarrow \frac{y}{-1} = -1$
 $\sin x = -1 \rightarrow \frac{y}{-2} = -\frac{1}{2}$

8) $D = [-1, 0] \cup [0, 1]$

9) $y = \left| \frac{x^2-1}{x^2} \right| \rightarrow y = \frac{|x^2-1|}{|x^2|} \rightarrow y|x^2| = |x^2-1| \quad D = [0, +\infty)$

10) $y = \sqrt{\frac{x^2-1}{x^2+1}} \rightarrow D = [0, +\infty) - \left\{ \frac{x}{r} \right\}$

11) $y = x|x| - x^2 \quad D = [1, \infty)$

12) $\begin{cases} x > 0 \rightarrow x^2 - x^2 \rightarrow 0 \\ x < 0 \rightarrow -x^2 - x^2 \rightarrow -2x^2 \end{cases}$

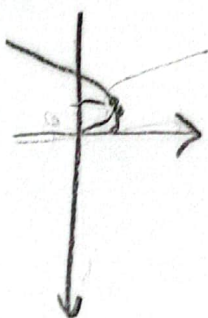
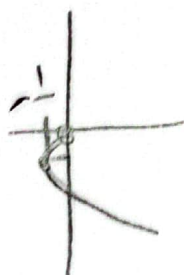
13) $D = [1, \infty)$

$$y = u|u| - r_u$$

$$\underline{h = |h|}$$

(10)

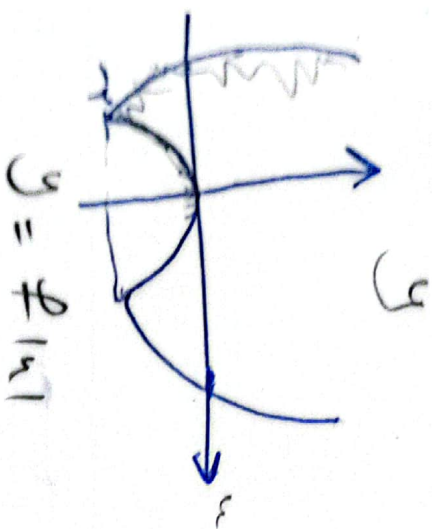
$$\begin{cases} u > 0 & u' - r_u \rightarrow \text{ext} / -1 \\ u < 0 & -u' - r_u \end{cases} \quad \frac{u}{r} \rightarrow -1$$



برای $y = \mathcal{L}(|u|)$ مشتقات خود را بدست آوریم و در آنجا

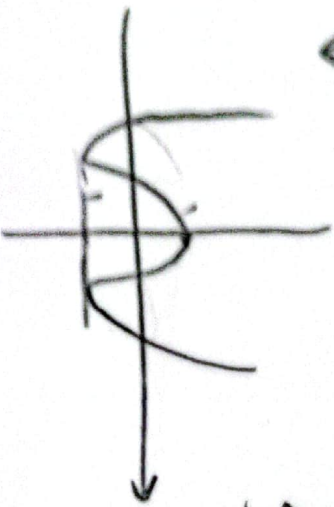
قوانین δ و δ' را اعمال کنیم

(1-)



$$y = f(|u|)$$

$y' = 0$ at $u=0$



در بدنه δ

