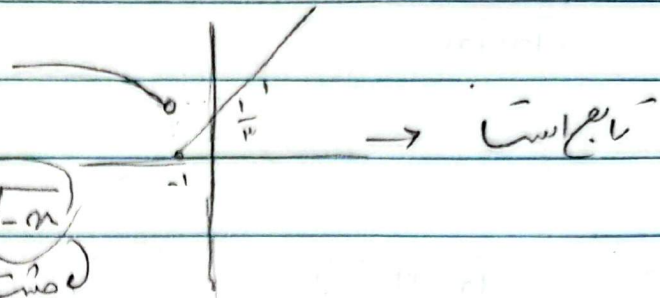


* تالیف: یوسف

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①

$$x = \begin{cases} y-1 & y \geq 0 \\ -y^2 & y < 0 \end{cases}$$



$$y = \frac{m+1}{m}, \quad y = \frac{+ \sqrt{-m}}{m}$$

مشتق قبل

$$g(m) = \frac{m f(m-1)}{f(m)}$$

$$m=0 \Rightarrow f(m-1)=0 \rightarrow m=-1$$

②

$$f(m)=0 \rightarrow m=-1$$

$$m=\infty$$

$$m=1$$

$$-1 \quad -1 \quad 0 \quad 1 \quad \infty$$

$$m=1, m=\infty$$

$$-\frac{1}{2} + \frac{1}{2} - \frac{1}{2} + \frac{1}{2} - \frac{1}{2} + \frac{1}{2} \rightarrow Df = (-1, -1] \cup [0, 1) \cup [1, \infty)$$

$$f(m) = \frac{m^2 - m + 1}{m^2 - m}$$

③

$$\text{الف) } m^2 - m + 1 \neq 0 \rightarrow m(m^2 - 1) \neq 0 \rightarrow m \neq 0, m \neq \pm 1 \rightarrow Df \subset \mathbb{R} - \{0, -1, 1\}$$

$$\text{ب) } \frac{m^2 - m + 1}{m^2 - m} \xrightarrow{\Delta < 0, \Delta > 0} \text{موازیات}$$

$$\xrightarrow{\frac{-1 \pm \sqrt{5}}{2}} -\frac{1}{2} + \frac{1}{2} - \frac{1}{2} + \frac{1}{2} \rightarrow Df \subset (-1, 0) \cup (1, \infty)$$

$$\text{الف) } y = \sqrt{\frac{m-1}{m^2 - m^2 - 1}} \rightarrow y \geq 0 \rightarrow$$

④

$$t^2 - 2t - 1 = 0 \rightarrow t = 1, t = -1 \rightarrow$$

$$m = -1 \text{ و } m = 1, m^2 = 1 \rightarrow m = \pm 1, m-1=0 \rightarrow m=1$$

$$-\frac{1}{2} + \frac{1}{2} \rightarrow Dy = (-1, \infty) - \{1\}$$

$$\text{ب) } y = \frac{m^2 + 1}{m^2 - 1} \rightarrow 1 \neq 1[-m] \rightarrow [-m] \neq 1 \rightarrow -1 < x \leq 1$$

$$Df = \mathbb{R} - (-1, 1]$$

الف) $f(x) = \sqrt{x(x^2-1)} \rightarrow x=0, x=\pm 1 \rightarrow \frac{-1}{-1+1-1} \oplus$ ④

$\sqrt{|x|+x} \rightarrow |x|+x \geq 0 \rightarrow \left. \begin{array}{l} \text{if } x < 0 \rightarrow 0 \\ \text{if } x = 0 \rightarrow 0 \\ x > 0 \rightarrow \checkmark \end{array} \right\} \textcircled{1}$

① ④ $\Rightarrow Df = [1, +\infty)$

ب) $f(x) = \sqrt{|x-1|-x^2} \rightarrow \begin{array}{l} x > 1 \rightarrow -x^2 + x - 1 = 0 \rightarrow \Delta < 0, \Delta < 0 \rightarrow \text{هستارده} \\ x < 1 \rightarrow -x^2 - x + 1 = 0 \rightarrow x = \pm 1 \end{array}$ ④

$|x|-1 \rightarrow |x| \neq 1 \rightarrow x \neq \pm 1 \textcircled{1}$

$\frac{-1}{-1+1-1} \oplus \rightarrow [-1, 1] \textcircled{2}$

① ② $\Rightarrow Df = [-1, 1] - \{-1\}$

الف) $y = \sqrt{(x-2)[x-3]} \rightarrow x=2, [x-3]=0 \rightarrow 0 \leq x-3 < 1 \rightarrow$

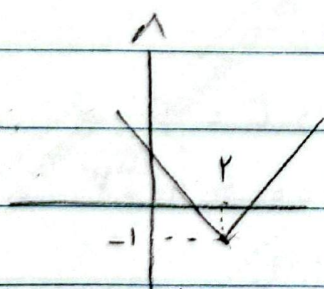
$2 \leq x < 3 \rightarrow \frac{2}{+} \frac{3}{0 \oplus +} \rightarrow Df = [2, 3]$

ب) $y = \sqrt{|x-1|[x-3]} \rightarrow y \geq 0 \rightarrow x=1, 0 \leq x-3 < 1 \rightarrow 3 \leq x < 4$

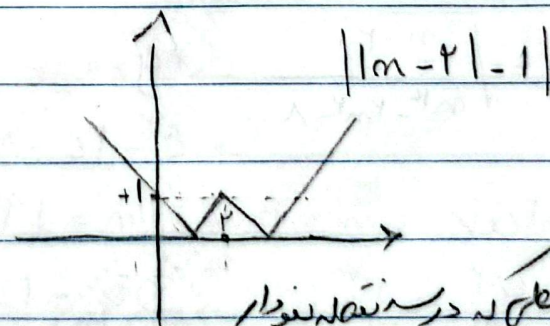
$\frac{-1}{-1-1-1} \oplus + \rightarrow Df = [3, +\infty) \cup \{1\}$

$y = \frac{1}{||x-2|-1|-K}$ ⑤

$||x-2|-1| \neq K \rightarrow \text{نمودار}$



$||x-2|-1|$



نقاط خطر در دستهای نمودار

را قطع می کنند از $|K| \leq 1$

⑧

$$m^2 + 2m + 1 \neq 0 \rightarrow m \neq -1, m \neq -1 \rightarrow \text{مخرج دالدار}$$

$$m \neq 1, m \neq -1$$

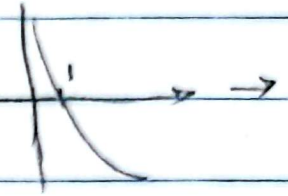
$$m^2 - 4m + 4 = 0 \rightarrow (m - 2)^2 = 0 \rightarrow m = 2 \quad \text{یک ریشه دارد}$$

⑨

$$\textcircled{1} m + 1 \neq 1 \rightarrow m \neq 0, m + 1 > 0 \rightarrow m > -1$$

$$\textcircled{2} m \neq 1, m > 0 \quad \log \frac{1}{m} > 0 \rightarrow$$

$$\textcircled{3} 0 < m < 1 \rightarrow \textcircled{1} \cap \textcircled{2} \cap \textcircled{3} = Df = (0, 1)$$



⑩

$$-2 \leq 10^{\frac{1}{\mu}} - 1 \leq \mu \rightarrow -\mu \leq \mu^{\frac{1}{\mu}} \leq \mu \rightarrow m^{\frac{1}{\mu}} \leq \frac{\mu}{\mu} \rightarrow$$

$$\frac{-\mu}{\sqrt{\mu}} \leq m \leq \frac{\mu}{\sqrt{\mu}} \rightarrow -\frac{\sqrt{\mu}}{\mu} \leq m \leq \frac{\sqrt{\mu}}{\mu} \rightarrow Df = \left[-\frac{\sqrt{\mu}}{\mu}, \frac{\sqrt{\mu}}{\mu} \right]$$