

19, 25

تالیف

آرمین لیزدی کلاس B

$$f(-x) - xf(x) = \underbrace{(|x|+1)}_{\text{2}} \quad (2) - 1$$

$$x = -x \rightarrow f(x) + xf(-x) = \underbrace{(|-x|+1)}_{\text{2}} = 2$$

$$Z = 2$$

$$f(-x) - xf(x) = Z \rightarrow f(-x) = Z + xf(x)$$

$$f(x) + xf(-x) = Z$$

$$f(x) + x(Z + xf(x)) = Z \rightarrow (1+x^p)f(x) + xZ = Z$$

$$(1+x^p)f(x) = Z(1-x) \rightarrow f(x) = \frac{(2|x|+1)(1-x)}{x^p+1}$$

$$f(x) + f(0) = x^p - px + y \quad (2) - 4$$

$$f(0) + f(0) = y \rightarrow f(0) = y$$

$$f(x) + y = x^p - px + y \rightarrow f(x) = x^p - px + y$$

$$f(x^p) = (x^p)^p - px^p + y \rightarrow f(x^p) = x^{p^2} - px^p + y$$

Scanned with

$$y = \frac{x^p + x + 1}{x-1} \rightarrow yx - y = x^p + x + 1$$

$$(1) \quad \mu$$

$$\rightarrow x^p + (1-y)x + (y+1) = 0 \quad \Delta = (1-y)^2 - 4(y+1) \geq 0$$

$$\rightarrow y^2 - 4y - 4 \geq 0 \rightarrow (y-4)(y+1) \geq 0 \rightarrow R = (-\infty, -1] \cup [4, +\infty)$$

$$\text{الف) } y = \frac{px^p - ax + 1}{x-1} \xrightarrow{a > 0} \begin{cases} x_{\min} = \frac{a}{p} \\ y_{\min} = \frac{pa}{\lambda} - \frac{pa}{p} + 1 = -\frac{1}{\lambda} \end{cases}$$

$$(1, 2)$$

$$\rightarrow R = \left[-\frac{1}{\lambda}, +\infty\right)$$

$$\text{ب) } y = \sqrt{-x^p + px - a} \xrightarrow{a < 0} \begin{cases} x_{\max} = \frac{-p}{-p} = \mu \\ y_{\max} = \mu \end{cases}$$

$$\rightarrow R = \sqrt{(-\infty, \mu]} \rightarrow R = [0, \mu]$$

راحت

$$\text{ج) } y = \sqrt{x^p - px^p + px + 1} \rightarrow R = [0, +\infty)$$

$$\text{د) } y = \log(x^p - px^p + px + 1) \rightarrow x^p - px^p + px + 1 > 0$$

$$= (x-1)(x^p - px - 1) \Rightarrow \frac{1-\sqrt{p}}{-1} \quad \frac{1+\sqrt{p}}{+1} \quad \frac{p}{+}$$

$$\Rightarrow R = (-$$

$$\Delta) \log(n^p - \gamma n^p + \gamma n + f) \rightarrow R = (-\infty, +\infty)$$

راه حل

$$\text{الف) } y = \frac{p n + 1}{p n - \gamma} \rightarrow R = \mathbb{R} - \left\{ \frac{p}{\gamma} \right\}$$

1, 5 - 1

راه حل

$$\text{ب) } y = \sqrt{\frac{f n + 1}{n - p}} \rightarrow R = [0, +\infty) - \left\{ \frac{1}{p} \right\}$$

$$\text{ج) } y = \frac{n^p + f}{\sqrt{n^p + p}} = \frac{n^p + p + 1}{\sqrt{n^p + p}} = \sqrt{n^p + p} + \frac{1}{\sqrt{n^p + p}}$$

$$\Rightarrow R = \left[\frac{f + \sqrt{p}}{p}, +\infty \right)$$

$$\Delta) y = n^p + \frac{1}{n^p + f} \rightarrow R = \left[\frac{1}{f}, +\infty \right)$$

$$y = \frac{p n^p + f}{n^p - 1} \rightarrow n = 1 \rightarrow y = p$$

$$y = \frac{p n^p + f}{n^p - 1} \rightarrow n = -\infty \rightarrow y = -f$$

$$y = \frac{p n^p + f}{n^p - 1} \rightarrow n = +\infty \rightarrow y = p$$

$$R = (-\infty, -f] \cup (p, +\infty)$$

روش اصلی

1

$$y = \frac{p \sin n + f}{\sin n - p} \rightarrow \sin n = 1 \rightarrow y = -p$$

$$y = \frac{p \sin n + f}{\sin n - p} \rightarrow \sin n = -1 \rightarrow y = -\frac{1}{p}$$

2 - V

$$R = \left[-p, -\frac{1}{p} \right]$$

الف) $y = \left| \frac{13x-1}{f(x)} \right| \Rightarrow 13x-1=0 \Rightarrow x = \frac{1}{13}$ راحله ٥ - ١

$\Rightarrow R = [0, +\infty)$

(٢٥)

ب) $y = \sqrt{\frac{9x-11}{-1+7x}}$ $x \neq \frac{1}{7} \rightarrow \sqrt{\frac{9(x-\frac{1}{9})}{7(x-\frac{1}{7})}} \rightarrow R = \left\{ \frac{1}{7} \right\}$

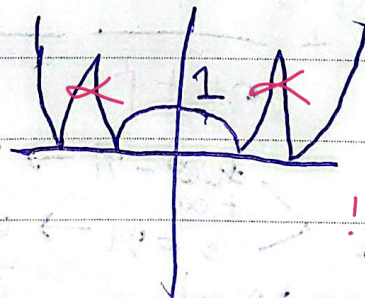
$y = x|x| - 7x \rightarrow y = \begin{cases} x^2 - 7x & x \geq 0 \\ -x^2 - 7x & x \leq 0 \end{cases}$ (٢) - ١

$x^2 - 7x \xrightarrow{a > 0} \begin{cases} x_{\min} = 1 \\ y_{\min} = -1 \end{cases} \rightarrow [-1, +\infty) \cup$

$-x^2 - 7x \xrightarrow{a < 0} \begin{cases} x_{\min} = -1 \\ y_{\min} = 1 \end{cases} \rightarrow (-\infty, 1]$

$\Rightarrow R = (-\infty, +\infty)$

$|f(|x|) + 1| \rightarrow$



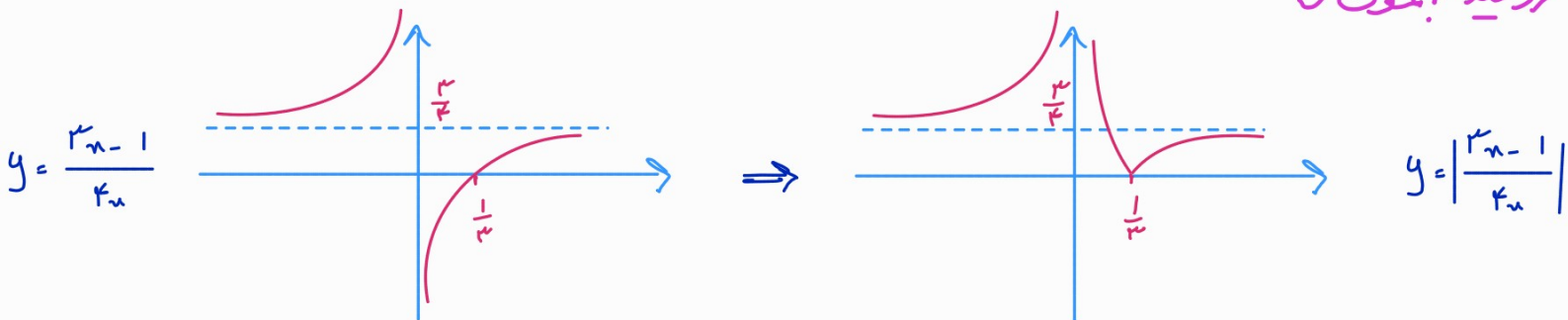
مرحله به مرحله پیش!

۹- روش اصلی: $y n^r - y = 3n^r + 4 \rightarrow (y-3)n^r = y+4$

$n^r = \frac{y+4}{y-3} \geq 0 \rightarrow \frac{-4}{+} \frac{3}{-} \Rightarrow R_y = (-\infty, -4] \cup (3, +\infty)$

۸- اول برد عبارت داخل قدر مطلق
 رد حساب می کنیم بعد قدر مطلق می گیریم
 فقط حواس باشد که $y = \frac{3}{4}$ هم هست داخل برد
 $y = -\frac{3}{4}$ عضو برد عبارت داخل قدر مطلق هست و وقتی قدر مطلق بگیریم $y = \frac{3}{4}$

روید به نمودار:



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