

۱۷, ۵

گرسا، فنی، کتف سا، ۰ < دوازدهم پیر

$$\begin{cases} f(-x) - x f(x) = \sqrt{|x|} + 1 \\ f(x) + x f(-x) = \sqrt{|-x|} + 1 \end{cases}$$

$$\rightarrow \begin{cases} x f(-x) - x^2 f(x) = \sqrt{x} |x| + x \\ f(x) + x f(-x) = \sqrt{|x|} + 1 \end{cases}$$

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

$$\rightarrow f(x) = \begin{cases} \frac{-\sqrt{x} + x + 1}{x^2 + 1} & x \geq 0 \\ \frac{\sqrt{x} - x + 1}{x^2 + 1} & x < 0 \end{cases}$$

$$x=0 \rightarrow f(0) + f(0) = 0^r - r(0) + y$$

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

$$f(x) = x^r - rx + y$$

$$\rightarrow f(x^r) = (x^r)^r - r(x^r) + y = x^r - rx^r + y \checkmark$$

(2) - 1

$$\rightarrow yx - y = x^r + x + y$$

$$\rightarrow x^r \in (1-y)x + r + y = 0$$

$$\rightarrow x = \frac{y - 1 \pm \sqrt{\Delta}}{r} \rightarrow y^r - y + 1 - ry - 1 \geq 0$$

$$\rightarrow y^r - y - r \geq 0$$

$$\rightarrow (y-r)(y+1) \geq 0 \quad \begin{array}{c} -1 \quad r \\ + \quad - \quad + \end{array}$$

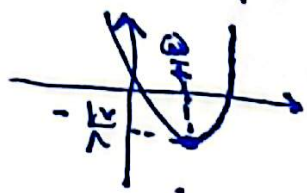
$$\boxed{R_f = (-\infty, -1] \cup [r, +\infty)} \checkmark$$

(2) - 1

$$c) \dot{e}_{xt} = \frac{-6}{\sqrt{a}} = \frac{\omega}{\sqrt{a}}$$

(2) - 1

$$\rightarrow \sqrt{\left(\frac{\omega}{\sqrt{a}}\right)^2 - \omega\left(\frac{\omega}{\sqrt{a}}\right) + 1} = -\frac{1}{\sqrt{a}}$$



$$\rightarrow R_f = \left[-\frac{1}{\sqrt{a}} \text{ } \infty\right)$$

$$o) \frac{-6}{\sqrt{a}} = \frac{-4}{-\sqrt{a}} \rightarrow -\left(\frac{4}{\sqrt{a}}\right)^2 + 4\left(\frac{4}{\sqrt{a}}\right) - \omega = 1$$

$$R_f = \left[-\infty \text{ } \infty\right) \rightarrow R_f = \left[-\infty \text{ } \infty\right) = \left[0 \text{ } \infty\right)$$

$$2o) R_f = \left[-\infty \text{ } \infty\right) = \left[0 \text{ } \infty\right)$$

$$> \log(-\infty \text{ } \infty) \rightarrow \log(0 \text{ } \infty) \rightarrow \log(1) = 0 \rightarrow R_f = \left[0 \text{ } \infty\right)$$

$$c) R_f = \mathbb{R} - \left\{\frac{a}{2}\right\} \Rightarrow R_f = \mathbb{R} - \left\{\frac{1}{2}\right\}$$

(2) - 1

$$o) R_f = \mathbb{R} - \left\{\frac{1}{2}\right\} = \left[0 \text{ } \infty\right) - \left\{\frac{1}{2}\right\}$$

$$2o) \frac{x^2 + x + 1}{\sqrt{x^2 + 1}} = \frac{x^2 + x}{\sqrt{x^2 + 1}} + \frac{1}{\sqrt{x^2 + 1}} = \sqrt{x^2 + 1} + \frac{1}{\sqrt{x^2 + 1}}$$

$$\rightarrow x=0 \rightarrow \sqrt{1} + \frac{1}{\sqrt{1}} = 2 \rightarrow R_f = \left[\frac{1}{\sqrt{2}} \text{ } \infty\right)$$

$$> x^2 + x - \frac{1}{2} + \frac{1}{\sqrt{x^2 + 1}} \rightarrow x^2 + x + \frac{1}{\sqrt{x^2 + 1}} - \frac{1}{2}$$

$$\rightarrow x=0 \rightarrow \frac{1}{2} \rightarrow R_f = \left[\frac{1}{2} \text{ } \infty\right) \Rightarrow R_f = \left[\frac{1}{2} \text{ } \infty\right)$$

$$\text{روش اول} \rightarrow yx^2 - y = x^2 + 1$$

$$yx^2 - x^2 = y + 1$$

$$\rightarrow x^2(y - 1) = y + 1$$

$$\rightarrow x^2 = \frac{y+1}{y-1} \rightarrow \frac{y+1}{y-1} > 0$$

$$\frac{-1}{+1} < \frac{1}{-1} < 0$$

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

$$\text{روش دوم} \rightarrow 0 < x^2 < \infty$$

$$\begin{cases} x^2 = 0 \rightarrow -1 \\ x^2 = +\infty \rightarrow \frac{y+1}{y-1} = y \\ x^2 \neq 1 \rightarrow x \neq \pm 1 \end{cases}$$

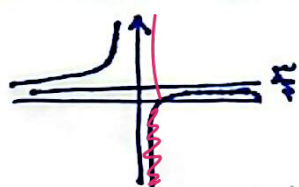
$$R_f = (-\infty, -1] \cup (1, +\infty)$$

$$-1 \leq \sin x \leq 1$$

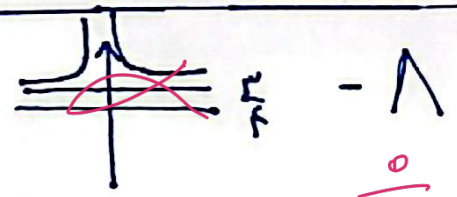
$$\begin{cases} \sin x = -1 \rightarrow \frac{1(-1)+1}{-1-1} = -\frac{1}{1} \\ \sin x = 1 \rightarrow \frac{1(1)+1}{1-1} = -\infty \end{cases}$$

$$R_f = [-1, -\frac{1}{1}]$$

$$\text{الف) } \frac{x^2-1}{x^2}$$



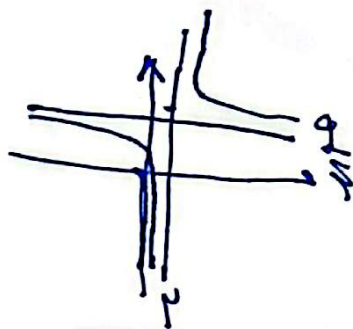
قدر مطلق دور کل
اوپر، منفرجه و قدینه
کشیتم بالا



صفحه آخر...

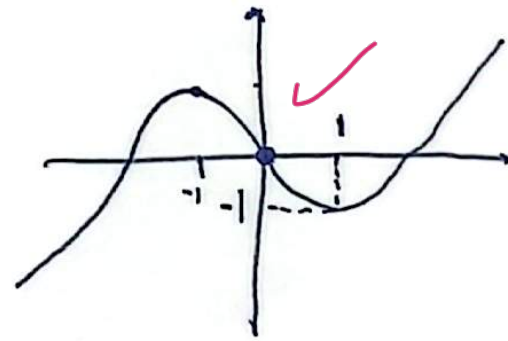
$$R_f = (1, +\infty)$$

$$\text{ب) } \frac{x^2-1}{-1+x^2}$$



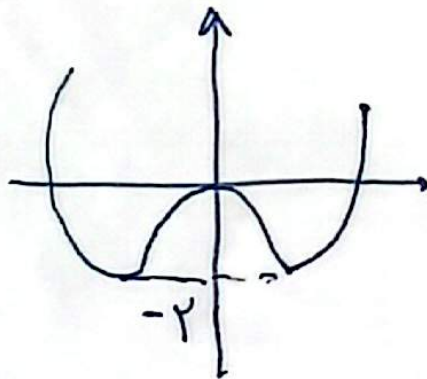
$$R_f = [1, +\infty) \cup (-\infty, -1]$$

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



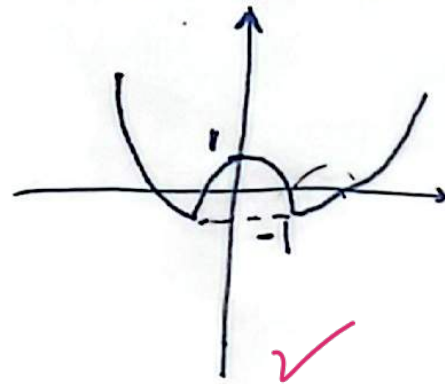
$$(2) = 9$$

$$R_f = \mathbb{R} \checkmark$$



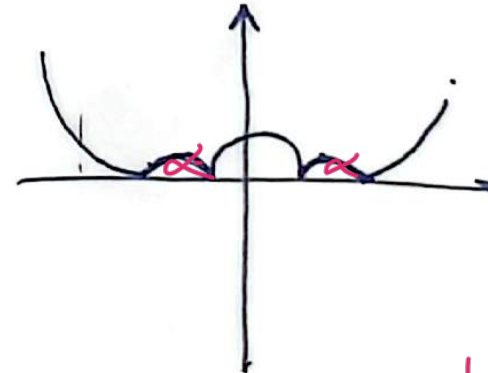
$$f(|x|)$$

$$R_f = [-2, +\infty)$$



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

$$R_f = [-1, +\infty)$$



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

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

$$-10$$

$$(1, 5)$$

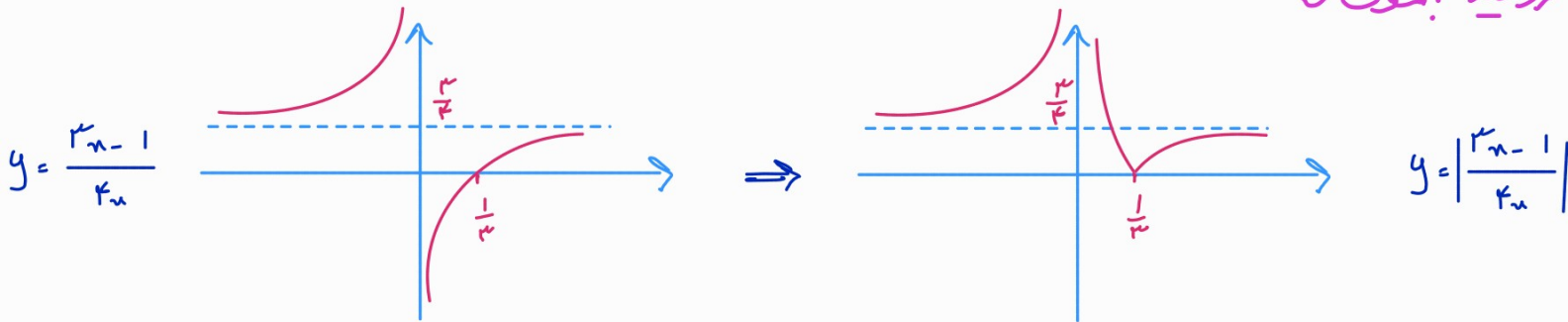
فشار قدرینه:

۸- اول برد عبارت داخل قدر مطلق
رو حساب می کنیم بعد قدر مطلق می گیریم

فقط خواست 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:



۸- ب) $y = \sqrt{\frac{4(n-2)}{4(n-2)}} = \sqrt{\frac{4}{4}} = \frac{3}{2} \Rightarrow R_y = \left\{ \frac{3}{2} \right\}$

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