

14, 15

رسم رضوانی راد ۱۲ سپر A

-1

$$f(x) + x f(-x) = f(-x) - x f(x) = 2|x| + 1 \quad (2)$$

$$f(-x) = x f(x) + 2|x| + 1$$

$$f(x) + x^2 f(x) + 2x|x| + x = 2|x| + 1$$

$$f(x)(x^2 + 1) = 2|x| + 1 - x(2|x| + 1)$$

فشار

$$f(x) = \frac{2|x| + 1 - x(2|x| + 1)}{x^2 + 1} \quad f_{\text{con}} = \frac{(1-x)(2|x| + 1)}{1 + x^2}$$

$$2f(0) = 1 \Rightarrow f(0) = \frac{1}{2} \quad f(x) = x^2 - 2x + 1 \quad (2) - 2$$

$$f(x) = x^2 - 2x + 1$$

$$xy - y = x^2 + x + 2 \Rightarrow x^2 + (1-y)x + 2+y \quad (1, 2) - 2$$

$$x = \frac{y-1 \pm \sqrt{y^2 - 2y + 1 - 4y - 4}}{2} \Rightarrow y^2 - 2y - 5 \geq 0$$

$$\Rightarrow y \in [-1, 6]$$

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

$$\frac{-b}{2a} = \frac{\omega}{\epsilon} \quad 1, \min \Rightarrow \frac{x \times 2\omega}{2 \times 1} - \frac{2\omega}{\epsilon} + 1 \leq 1 - \frac{2\omega}{\lambda}$$

$$= \frac{-1\omega}{\lambda} \quad (2) - 4$$

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

Subject.

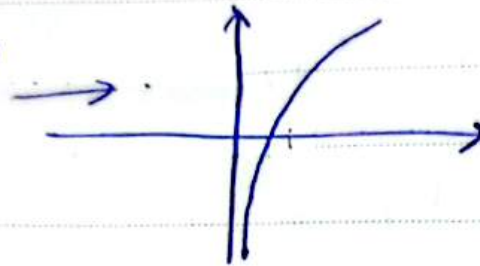
Day. Month. Year.

$$-x^2 + 4x - 4 \quad \frac{-4}{-1} = 4 \quad -4 + 16 - 4 = 8$$

$$\rightarrow (-\infty, 4] \rightarrow \sqrt{(-\infty, 4]} = [0, 2]$$

$$\sqrt{1R} = [0, +\infty) \quad R_f = 1R \quad \text{تابع درجه فرد است} \quad (ج)$$

log



$$R_f = 1R$$

$$R_f = 1R - \left\{ \frac{1}{2} \right\} \quad \text{الف-ا} \quad (د)$$

$$\sqrt{1R - \left\{ \frac{1}{2} \right\}} = [0, +\infty) - \left\{ \frac{1}{2} \right\} \quad (ب)$$

$$\frac{x^2 + 3 + 1}{\sqrt{x^2 + 3}} = \sqrt{x^2 + 3} + \frac{1}{\sqrt{x^2 + 3}} \Rightarrow R_f = \left[\sqrt{3} + \frac{1}{\sqrt{3}}, +\infty \right) \quad (ج)$$

$$x^2 + 4 + \frac{1}{x^2 + 4} - 4 \quad \left[\frac{1}{4}, +\infty \right)$$

$$[4, 20, +\infty) - 4$$

$$x^2 = \frac{y + 4}{y - 4} \rightarrow x = \pm \sqrt{\frac{y + 4}{y - 4}}$$

۴- روش اصلی:

$$\Rightarrow y \in (-\infty, -4] \cup [4, +\infty) \quad (د)$$

$$\begin{matrix} +\infty \rightarrow 4 \\ 0 \rightarrow -4 \end{matrix} \quad \begin{matrix} \text{نقطه صفر} \\ \text{حیث شود} \end{matrix} \rightarrow R_f = (-\infty, -4] \cup (4, +\infty) \quad \text{تکثر ۲؟}$$

Subject.

Day.

Month. Year.

$$\sin x = 1 \rightarrow -\pi$$

$$\sin x = -1 \rightarrow -\frac{1}{\pi}$$

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

② -V

$$\frac{x-1}{x} \rightarrow R = \mathbb{R} - \{\frac{1}{x}\}$$

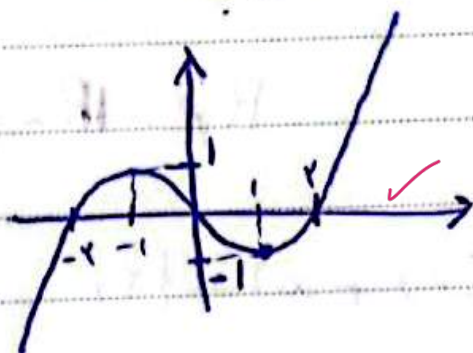
1-الف

①, ②

$$|\mathbb{R} - \{\frac{1}{x}\}| = [0, +\infty) - \{\frac{1}{x}\}$$

$$\sqrt{\frac{a(x-1)}{x(x-1)}} \Rightarrow R_f = \{\frac{x}{x}\}$$

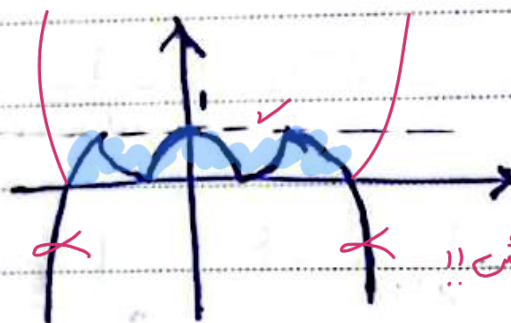
(-)



$$R_f = \mathbb{R}$$

②

$$f(x) = f(|x|)^*$$



① -

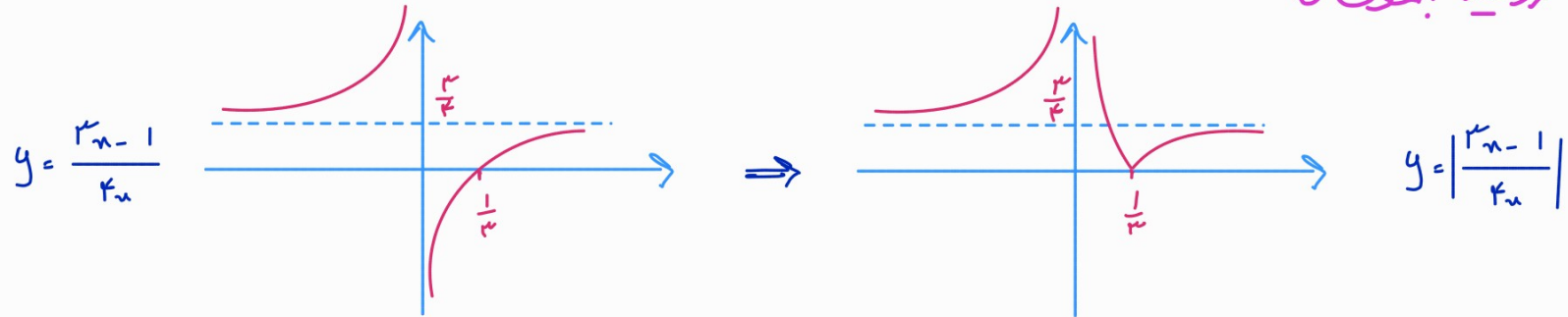
مرحله به مرحله پیش !!

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

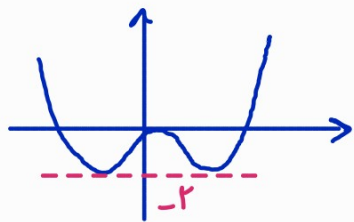
فقط حواسه باشه که $y = \frac{3}{4}$ هم هست داخل برد

$y = -\frac{3}{4}$ عضو برد عبارت داخل قدر مطلق هست و وقتی قدر مطلق بگیریم $y = \frac{3}{4}$

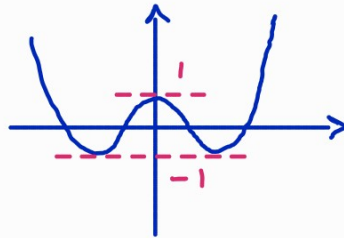
روید بهمونت



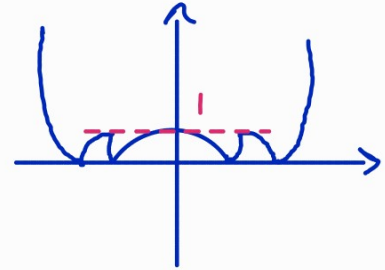
۱۰-



$$y = f(|x|)$$



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



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