

$$\begin{aligned} n \cdot m & \quad -m f(m) + f(-m) = 2|m| + 1 \\ m \cdot m & \quad f(m) + m f(-m) = 2|m| + 1 \end{aligned} \quad \begin{cases} -m^2 f(m) + m f(-m) = 2m|m| + 1 \\ f(m) + m f(-m) = 2|m| + 1 \end{cases}$$

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

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$$n=c \Rightarrow 2f(0)=4 \quad f(0)=2 \Rightarrow f(m)=m^2-2m+2$$

$$\Rightarrow f(m^2)=m^4-2m^2+2$$

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$$y \neq x \quad ym - y = m^2 + m + 2 \quad m^2 + (1-y)m + y + 2 = 0$$

$$\Delta \geq 0 \quad (1-y)^2 - 4(y+2) \geq 0 \quad y^2 - 2y + 1 - 4y - 8 \geq 0 \quad y^2 - 4y - 7 \geq 0$$

$$(y+1)(y-7) \geq 0 \Rightarrow y \in (-\infty, -1] \cup [7, +\infty) = \mathbb{R}$$

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$$\text{الف)} \quad \frac{4a^2 - b^2}{a^2} \Rightarrow \frac{1-2\omega}{1} = 1 - \frac{2\omega}{1} = 1 - 2 \cdot 0.125 = [-2.125, +\infty) = \mathbb{R}$$

$$\text{ب)} \quad \frac{10-24}{-4} = 4 \quad \sqrt{(-\infty, 4]} = [0, 4] = \mathbb{R}$$

$$\text{ج)} \quad \text{کدام عدد} \Rightarrow \mathbb{R} \neq \Rightarrow \sqrt{12} = [0, +\infty) < \mathbb{R}$$

$$\text{د)} \quad y \in (-\infty, +\infty) \Rightarrow y \in (0, +\infty) \Rightarrow \mathbb{R} = (-\infty, +\infty)$$

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$$\text{الف)} \quad \text{بعضی اعداد} \Rightarrow \text{کدام اعداد} = \mathbb{R} \Rightarrow \mathbb{R}_f = \mathbb{R} - \left\{ \frac{2}{3} \right\}$$

$$\text{ب)} \quad \sqrt{\mathbb{R} - \left\{ \frac{2}{3} \right\}} \Rightarrow \mathbb{R}_f = [0, +\infty) - \left\{ \frac{2}{3} \right\}$$

$$\text{ج)} \quad \sqrt{m^2+3} + \frac{1}{\sqrt{m^2+3}} \Rightarrow \text{مقلد از حد نیت} \quad \sqrt{3} + \frac{1}{\sqrt{3}} \Rightarrow \left(\frac{\sqrt{3}}{\sqrt{3}}, +\infty \right) = \mathbb{R}_f$$

$$\text{د)} \quad m^2 + 4 + \frac{1}{m^2+4} - 4 \Rightarrow \mathbb{R}_f = \left[4 + \frac{1}{4}, +\infty \right) - 4 \Rightarrow \mathbb{R}_f = \left[\frac{1}{4}, +\infty \right)$$

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$\min(m^2) = \frac{100}{9} = 11.11$ $\max(m^2) = 100 \Rightarrow 10$ مجموع میانه مغزی باشد
 $\Rightarrow (-\infty, -1] \quad (2, +\infty)$

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$\min(\sin u) = -1$ $\frac{-2+1}{-1-2} = \frac{1}{-3} = -\frac{1}{3}$
 $\max(\sin u) = 1$ $\frac{2+1}{1-2} = \frac{3}{-1} = -3$ مجموع میانه مغزی شود
 $\mathcal{R}_f = [-3, -\frac{1}{3}]$

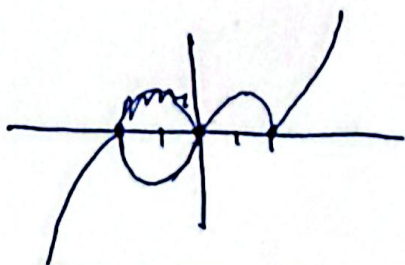
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اند) $|102 - \frac{100}{4}| \sim \cancel{\mathcal{R}_f = (0, +\infty) = \frac{100}{4} = 25}$ $\mathcal{R}_f = 102$

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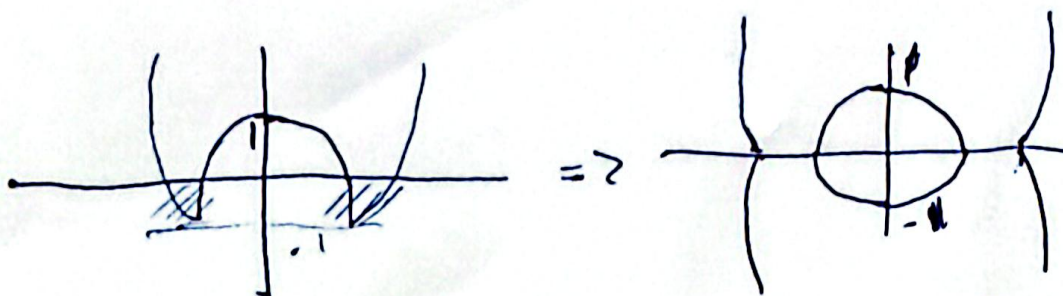
$\rightarrow y = \sqrt{\frac{g(m^2)}{f(m^2)}} \sim \mathcal{R}_f = \left\{ \frac{100}{4} \right\}$

$n(|m| - 2m) \in n(|m| - 2) \sim 0, \pm 2$



$\mathcal{R}_f = (-\infty, +\infty)$

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