

۱۷، ۷۵

نام = فاطمه شجری

دوازدهم دهنه A

کلیف

الف) $|x| - 2y = |x| + 1 \Rightarrow |x|(y-1) = 1+2y \Rightarrow |x| = \frac{1+2y}{y-1} \Rightarrow$

$\frac{1+2y}{y-1} \geq 0 \Rightarrow \frac{-\frac{1}{2}}{+1-\frac{1}{2}} \Rightarrow R_f = (-\infty, -\frac{1}{2}] \cup (1, +\infty)$ (۲) [۱]

ب) $y = \frac{x^2+1}{x} \Rightarrow x > 0 \Rightarrow x + \frac{1}{x}$
 $y = \frac{x^2+1}{-x} \Rightarrow x < 0 \Rightarrow -x - \frac{1}{x}$
 $\Rightarrow R_f = [2, +\infty)$

$yx + 2y = x^2 + 2x - 3 \Rightarrow x^2 + (2-y)x - 2-3y = 0$

$\Rightarrow \Delta = (2-y)^2 - 4(-2-3y) = 4 + y^2 - 4y + 8 + 12y = y^2 + 8y + 12 \geq 0$

$y^2 + 8y + 12 \geq 0 \Rightarrow (y+2)(y+6) \geq 0 \Rightarrow \frac{-6}{+1} \frac{-2}{-1} \Rightarrow R_f = (-\infty, -6] \cup [-2, +\infty)$ (۲) [۲]

$\frac{(x-\frac{1}{2})^2}{x^2-x+1} \Rightarrow$ معصوم کننده $D_f = \mathbb{R}$ (۵) [۳]

$\frac{(x-\frac{1}{2})^2}{(x-\frac{1}{2})^2 + \frac{3}{4}} = y \Rightarrow y(x-\frac{1}{2})^2 + \frac{3}{4}y = (x-\frac{1}{2})^2 \Rightarrow y(x-\frac{1}{2})^2 - (x-\frac{1}{2})^2 + \frac{3}{4}y = 0 \Rightarrow \Delta = 1 - \frac{3}{4}y \geq 0 \Rightarrow y \leq \frac{4}{3}$

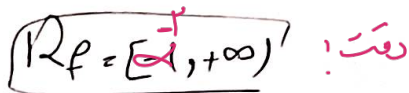
الف) $\max_{x \in \mathbb{R}} \Rightarrow \max_{x \in \mathbb{R}} = \frac{2}{2} \Rightarrow R_f = [0, \sqrt{3}]$ (۲) [۴]

ب) $\min_{x \in \mathbb{R}} \Rightarrow \min_{x \in \mathbb{R}} = \frac{2}{-1} \Rightarrow R_f = [-2, +\infty)$

$x^2 - x + 1 \Rightarrow D_f = \mathbb{R} \Rightarrow R_f = \mathbb{R}$ (۲) [۵]

اول دانه $\frac{x^2+1}{x} > 0 \Rightarrow x > 0 \Rightarrow x + \frac{1}{x} \Rightarrow R_f = [2, +\infty)$

① + 2

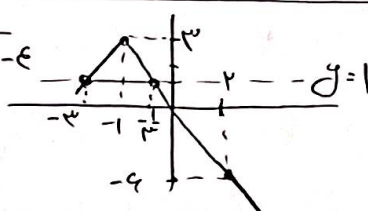


1, 2, 3

6

$$[\varepsilon, +\infty) = \mathbb{R}_f$$

$$\frac{-1}{n+\epsilon} \mid \frac{\gamma}{\epsilon m} \mid -\alpha - \epsilon$$



②

با توجه به شکل جواب نامعادله

$$\begin{array}{c|c|c} -\frac{1}{r} & 0 & \\ \hline \Sigma_{m+1} & -1 & r_{m-1} \end{array}$$

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

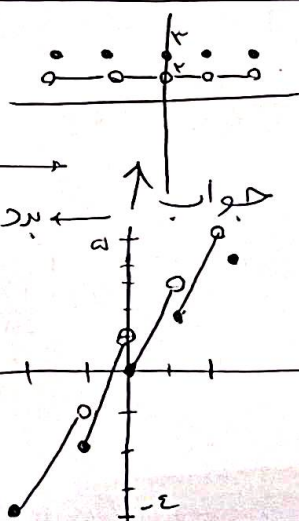
1, 2

8

$R_f = 5\mu, \checkmark$

$$\frac{1}{0}) \quad \psi_n - [n] \quad \begin{cases} -1 \leq n < 1 \rightarrow \psi_{n+1} \\ -1 \leq n < 0 \rightarrow \psi_{n+1} \\ 0 \leq n < 1 \rightarrow \psi_n \\ 1 \leq n < 2 \rightarrow \psi_{n-1} \\ n = 2 \rightarrow \psi \end{cases}$$

$$[Rf = [-\tau, \omega)]$$



১

9

$$\angle \sin \pi = 1 \quad \square \quad \sim$$

$$\Rightarrow R_f = \begin{bmatrix} \frac{r}{r} & \frac{r}{r} \end{bmatrix}$$

$$\sin \alpha = \frac{-6}{12} = \frac{1}{2}$$

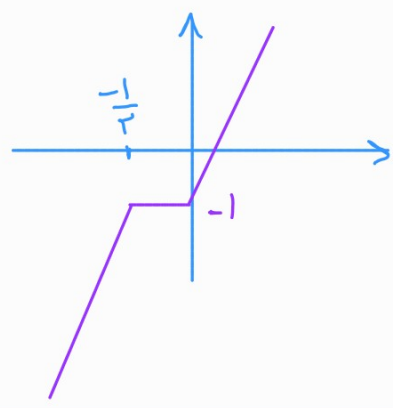
2

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$$\rightarrow \sin^r x + \sin^r x + 1 \xrightarrow{\sin^r x = 1} 1 + 1 + 1 = 3$$

$\left\{ \begin{array}{l} \sin^2 \neq -\frac{1}{r} \\ \sin^2 = 0 \end{array} \right. \Rightarrow R_f = [1, 3]$

$$y = \begin{cases} x_{n-1} & n \geq 0 \\ -1 & -\frac{1}{r} < n < 0 \\ x_{n+1} & n \leq -\frac{1}{r} \end{cases}$$



$$R_y = \mathbb{R}$$

$$f(n) = \frac{(n - \frac{1}{r})^r}{(n - \frac{1}{r})^r + \frac{r}{r}}$$

۳- خروج کسر همواره مثبت است پس دامنه $\mathbb{R}$ است

طرفین درمیان $\rightarrow y n^r - y n + y = n^r - n + \frac{1}{r} \rightarrow (y-1)n^r - (y-1)n + y - \frac{1}{r} = 0$

$$n = \frac{y-1 \pm \sqrt{(y-1)^2 - 4(y-1)(y-\frac{1}{r})}}{2(y-1)} \rightarrow \Delta \geq 0 \rightarrow (y-1)(y-1-\frac{4}{r}y+1) \geq 0$$

$\frac{0}{-} \mid \frac{1}{+}$ $\Rightarrow y = [0, 1]$

مخبر n نباید صفر شود یعنی $y \neq 1$ است

و تابع در انزای هیچ مقداری برابر یک نمیشه پس برد برابر است با: $R_y = [0, 1)$

می‌توانست از روش مربع هم استفاده کنی: $f(n) = \frac{\square^r}{\square^r + \frac{r}{r}}$