

دست کن! ۱۸/۲۵

پهچا میرانی

Subject:

Date:

$$y = \frac{x^2 + 2x + 2}{x-1} = 9x - 9 = x^2 + 2x + 2 \Rightarrow x^2 + x - 9x + 9 + 9 = 0$$

(۲) ۱

$$\Rightarrow x^2 + x(1-9) + 9 + 9 = 0 \xrightarrow{\Delta \geq 0} (1-9)^2 - 4 \cdot 9 \cdot 18 \geq 0 \Rightarrow 64 - 72 = -8 < 0$$

$$\rightarrow V_0 = 1 \quad \begin{array}{c} -1 \quad V_0 \\ 0 \quad -1 \quad 1 \end{array} \quad (-\infty, -1] \cup [1, +\infty)$$

$$x_{\min} = -\frac{b}{2a} = -\frac{1}{2} = -0.5 \quad g_{\min} = \frac{f(0)}{1} - \frac{f(-0.5)}{1} + 1 = -\frac{1}{4} \rightarrow P_P = [-\frac{1}{4}, +\infty)$$

(۲)

$$x_{\max} = -\frac{b}{2a} = 3 \rightarrow g_{\max} = 9 + 18 - 9 = 18 \rightarrow P_P = [0, 18]$$

(۳)

$$IR \rightarrow (0, +\infty)$$

ح) بزرگترین توان خردی زیر رادیکان  $IR \rightarrow (0, +\infty)$

$IR$

د) بزرگترین توان خرد

$$\frac{f_{2x+1}}{f_{2x-1}} \rightarrow \frac{R - \{ \frac{1}{5} \}}{R - \{ \frac{1}{5} \}} \quad IR - \{ \frac{1}{5} \}$$

(۳) الف)

$$\sqrt{\frac{f_{2x+1}}{f_{2x-1}}} \rightarrow [0, +\infty) - \{ \frac{1}{5} \}$$

ب)

$$\frac{x^2 + 4}{\sqrt{x^2 + 4}} + \frac{1}{\sqrt{x^2 + 4}} = \sqrt{x^2 + 4} + \frac{1}{\sqrt{x^2 + 4}} \quad \min = \sqrt{4+1} = \sqrt{5}$$

ج)

$$IR = [\sqrt{5} + \frac{1}{\sqrt{5}}, +\infty)$$

$$x^2 + \frac{1}{x^2 + 4} \geq 0 \rightarrow \min x = 0, 25 \rightarrow [0, 25, +\infty)$$

د)

$$20^2 y - y = 10^2 x^2 + 10^2 \rightarrow x^2 = \frac{y - 10^2}{y - 10^2} \quad 20 = \pm \sqrt{\frac{10}{y}}$$

$$\frac{-x}{y} = \frac{y}{y - 10^2} \rightarrow RP = (-\infty, -x] \cup (y, +\infty)$$

$$\min x = 0 \rightarrow -x \max 20^2 \rightarrow RP = (-\infty, -x] \cup (y, +\infty)$$

$$y \sin \alpha + y = r \sin \alpha = 1 \rightarrow \sin \alpha = \frac{-y - 1}{y - r} \rightarrow -1 \leq \frac{-y - 1}{y - r} \leq 1$$

$$0 \leq \frac{-y - 1}{y - r} \rightarrow \left[ -\frac{y}{r}, y \right)$$

$$RP = \left[ -\frac{y}{r}, \frac{1}{r} \right]$$

$$\frac{-xy + 1}{y - r} \leq 0 \rightarrow (-\infty, \frac{1}{r}] \cup (y, +\infty)$$

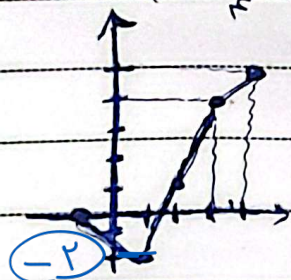
$$\min \sin \alpha = -1 \rightarrow -\frac{y}{r} \left[ -\frac{y}{r}, \frac{1}{r} \right]$$

$$\max \sin \alpha = 1 \rightarrow \frac{1}{r}$$

$$f\left(\frac{1}{r}\right) < 0$$

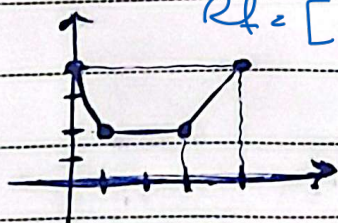
$$\frac{(20 - \frac{1}{r})^2}{(20 - \frac{1}{r})^2 + \frac{r}{r}} \rightarrow (20 - \frac{1}{r})^2 \rightarrow \max = 1 \quad \min = 0 \quad RP = (0, 1) \quad (9)$$

$$DP = x - x + 1 > 0 \rightarrow DP = IR \quad Rf = [0, \frac{1}{r})$$



$$|x - 2| = |x - 3| \quad RP = [-2, +\infty)$$

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



$$|x - 3| \leq |x - 1| \rightarrow$$

$$RP = [2, +\infty)$$

$$|x - 1| + |x + 1| \quad RP = [2, +\infty)$$

$$\begin{array}{c|c|c} -1 & 2 & \\ \hline x+2 & x-1 & -x-1 < 1 \\ x+2 & x-1 & x \geq \frac{1}{r} \quad x \geq 5 \end{array}$$

$$(-\infty, -x] \cup \left[ \frac{1}{r}, y \right] \cup (y, +\infty)$$

مرد، اینست مثل مرشد

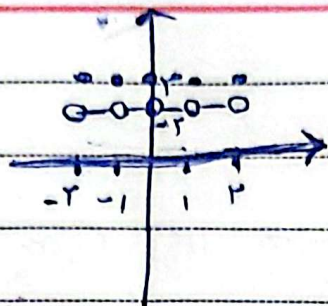
$$(-\infty, -x] \cup \left[ \frac{1}{r}, y \right] \cup (y, +\infty)$$

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$$[x] - [x - \infty] = y$$

$$Ry = [r, r]$$

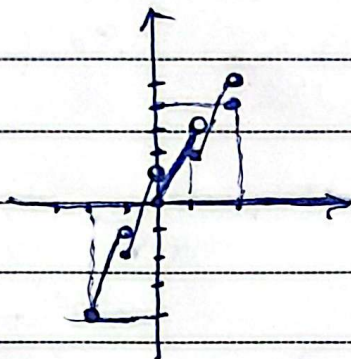


الف (9)

1, 1/8

$$x - [x] = y$$

$$R_p = [-r, \infty)$$



$$\sin x \leftarrow \begin{matrix} 1 \rightarrow 1 \\ -1 \rightarrow r \\ \frac{1}{r} \rightarrow \frac{r}{r} \end{matrix}$$

$$R_p = [1, 3]$$

$$[\frac{r}{2}, 1]$$

(الف) (10)

1, 1/8

$$\sin^r x \leftarrow \begin{matrix} p \rightarrow 1 \\ 1 \rightarrow r \\ -1 \rightarrow \times \end{matrix}$$

$$R_p = [1, 3]$$