

مستحب ترین درس!

۱۹/۲۵

ملینا کی بی

24 DECEMBER
Saturday
2022

۳ شنبه

① ②

$$yx - y = x^2 + x + 2 \rightarrow x^2 + x - ny + y + 2 = 0$$

$$ax^2 + \underbrace{(1-y)x}_b + \underbrace{y+2}_c = 0$$

$$b^2 - 4ac \rightarrow \Delta \geq 0$$

$$1 + y^2 - 4y - 4y - 8 \geq 0$$

$$y^2 - 4y - 7 \geq 0$$

$$(y+1)(y-7)$$

$$\begin{array}{c|c|c|c|c} -1 & & 7 & & \\ \hline + & - & + & - & + \\ \hline 2 & & 2 & & 2 \end{array}$$

$$\boxed{IR - \{1, 7\}}$$

$$\text{الف) } 2x^2 - 5x + 1 \rightarrow \frac{-b}{2a} = \frac{-5}{4}$$

$$\frac{5}{4} \rightarrow \frac{50}{14} - \frac{25}{4} + 1 \rightarrow \frac{50}{14} - \frac{100}{14} + \frac{14}{14} \rightarrow \frac{-36}{14} \rightarrow \frac{-18}{7}$$

$$a) \rightarrow \cup \left[-\frac{18}{7}, +\infty \right)$$

② ③

$$\text{ب) } \sqrt{-x^2 + 4x - 5} \rightarrow \frac{-b}{2a} \rightarrow \frac{-4}{-2} = 2$$

$$2 \rightarrow -9 + 18 - 5 = 4 \quad a < 0 \quad \rightarrow (-5, 4]$$

$$\sqrt{(-5, 4]} \rightarrow [0, 2]$$

$$\text{ج) } \sqrt{2x^2 - 4x + 1} \rightarrow \sqrt{IR} \rightarrow [0, +\infty)$$

چون توان بزرگتر از صفر

$$\text{د) } \log(x^2 - 4x + 7) \neq 0 \rightarrow (-\infty, +\infty)$$

ملیاتی یونیورسٹی

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سید شکیلہ
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مرتب تر بنویس!

۲) $y = \frac{x+1}{x-4} \rightarrow yx - 4y = x + 1$

$yx - x = 4y + 1 \rightarrow x(y - 1) = 4y + 1$

$x = \frac{4y+1}{y-1}$ $y \neq 1 \rightarrow y \neq \frac{1}{4}$ $\{R - \frac{1}{4}\}$

(۱)

ب) $y = \sqrt{\frac{x+1}{x-1}} \rightarrow yx - y = x + 1 \rightarrow yx - x = y + 1$

$x(y - 1) = y + 1 \rightarrow x = \frac{y+1}{y-1}$ $y \neq 1$ $\{R - 1\}$

$\sqrt{\{R - \frac{1}{4}\}} \rightarrow [0, \infty) - \{\frac{1}{4}\}$

ج) $x^2 + \frac{1}{x^2 + 1} \rightarrow \frac{x^2 + 1}{\sqrt{x^2 + 1}} \rightarrow \sqrt{x^2 + 1} + \frac{1}{\sqrt{x^2 + 1}}$

$x^2 + 1 \rightarrow \min x^2 \rightarrow 0$

$\sqrt{x^2 + 1} + \frac{1}{\sqrt{x^2 + 1}} = \frac{x^2 + 1}{\sqrt{x^2 + 1}} + \frac{1}{\sqrt{x^2 + 1}} = \frac{x^2 + 2}{\sqrt{x^2 + 1}} \rightarrow \left[\frac{2}{\sqrt{x^2 + 1}} \right] \rightarrow [1, \infty)$

د) $x^2 + \frac{1}{x^2 + 1} \rightarrow x^2 + \frac{1}{x^2 + 1} - 1 + 1 = x^2 - 1 + \frac{1}{x^2 + 1} + 1$

~~$x^2 + \frac{1}{x^2 + 1} - 1 + 1 = x^2 - 1 + \frac{1}{x^2 + 1} + 1$~~

~~$x^2 + \frac{1}{x^2 + 1} - 1 + 1 = x^2 - 1 + \frac{1}{x^2 + 1} + 1$~~

$x^2 + \frac{1}{x^2 + 1} \rightarrow \min \rightarrow 1 \rightarrow x^2 + \frac{1}{x^2 + 1} - 1 = \frac{1}{x^2 + 1}$

$R = [1, \infty)$

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(۴) $yn^2 - y = r n^2 + r$

$yn^2 - r n^2 = y + r$

$n^2(y - r) = y + r \rightarrow n^2 = \sqrt{\frac{y+r}{y-r}}$

$\frac{y+r}{y-r} \geq 0 \rightarrow \frac{-r}{+} \frac{r}{+} \quad \mathbb{R} - (-r, r]$

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

$\min = 0 \rightarrow -r$

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تذکرہ

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$\sin n y + r y = r \sin n - 1$

$\sin n (y - r) = -1 - r y \rightarrow \sin n = \frac{-1 - r y}{y - r}$

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

$2y \leq r \rightarrow y \leq \frac{r}{2}$

$-1 - r y \leq y - r \rightarrow -1 \leq r y \rightarrow y \geq \frac{1}{r}$

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

$\max \frac{r-1}{r} = \frac{1}{r}$

$\min \frac{r}{r} = 1$

$\frac{r}{r} = 1$

مخرجی دو ہر ہے

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

تذکرہ

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$$y^2x^2 - yx + y = x^2 - x + \frac{1}{x}$$

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

$$\underbrace{(y-1)x^2}_a + \underbrace{(-y+1)x}_b + \underbrace{y - \frac{1}{x}}_c = 0$$

$$b^2 - 4ac \rightarrow y^2 + 1 - 2y - 4(y-1)\left(y - \frac{1}{x}\right)$$

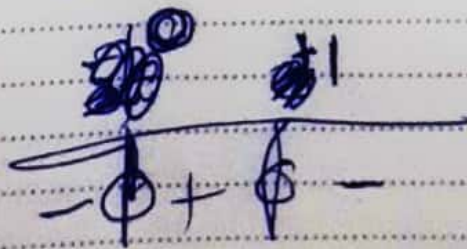
$$y^2 - \frac{1}{x}y - y + \frac{1}{x}$$

$$y^2 - \frac{2}{x}y + \frac{1}{x} - 4y^2 + 4y - 1$$

$$y^2 + 1 - 2y - 4y^2 + 4y - 1$$

$$-3y^2 + 2y \geq 0 \leftarrow \Delta \geq 0$$

$$y(-3y + 2) \geq 0$$



$$R = [0, \frac{2}{3}]$$

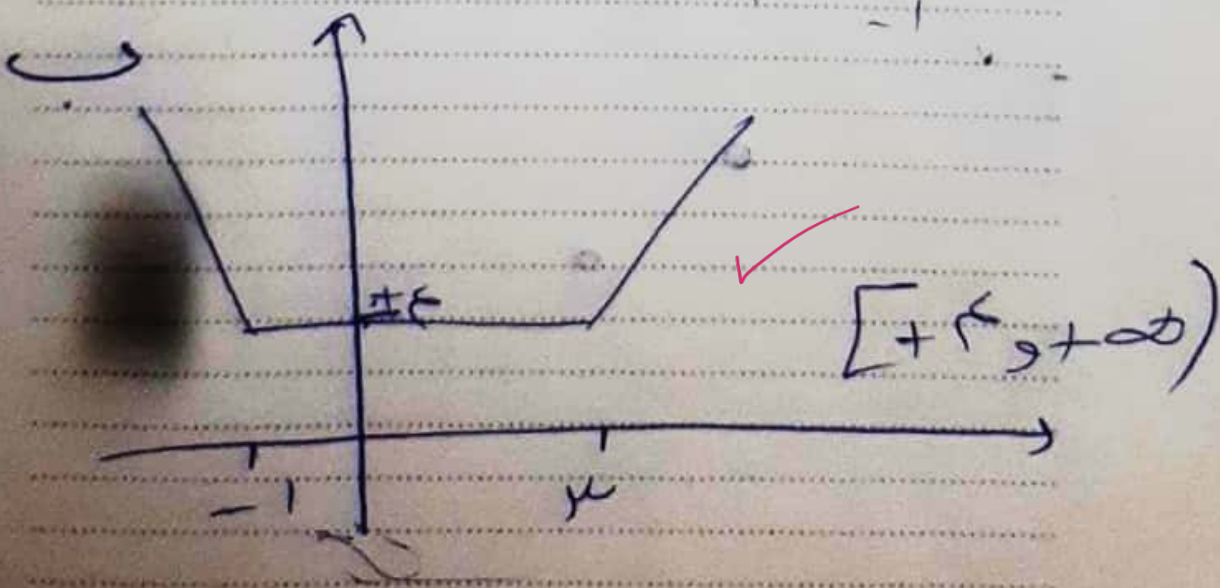
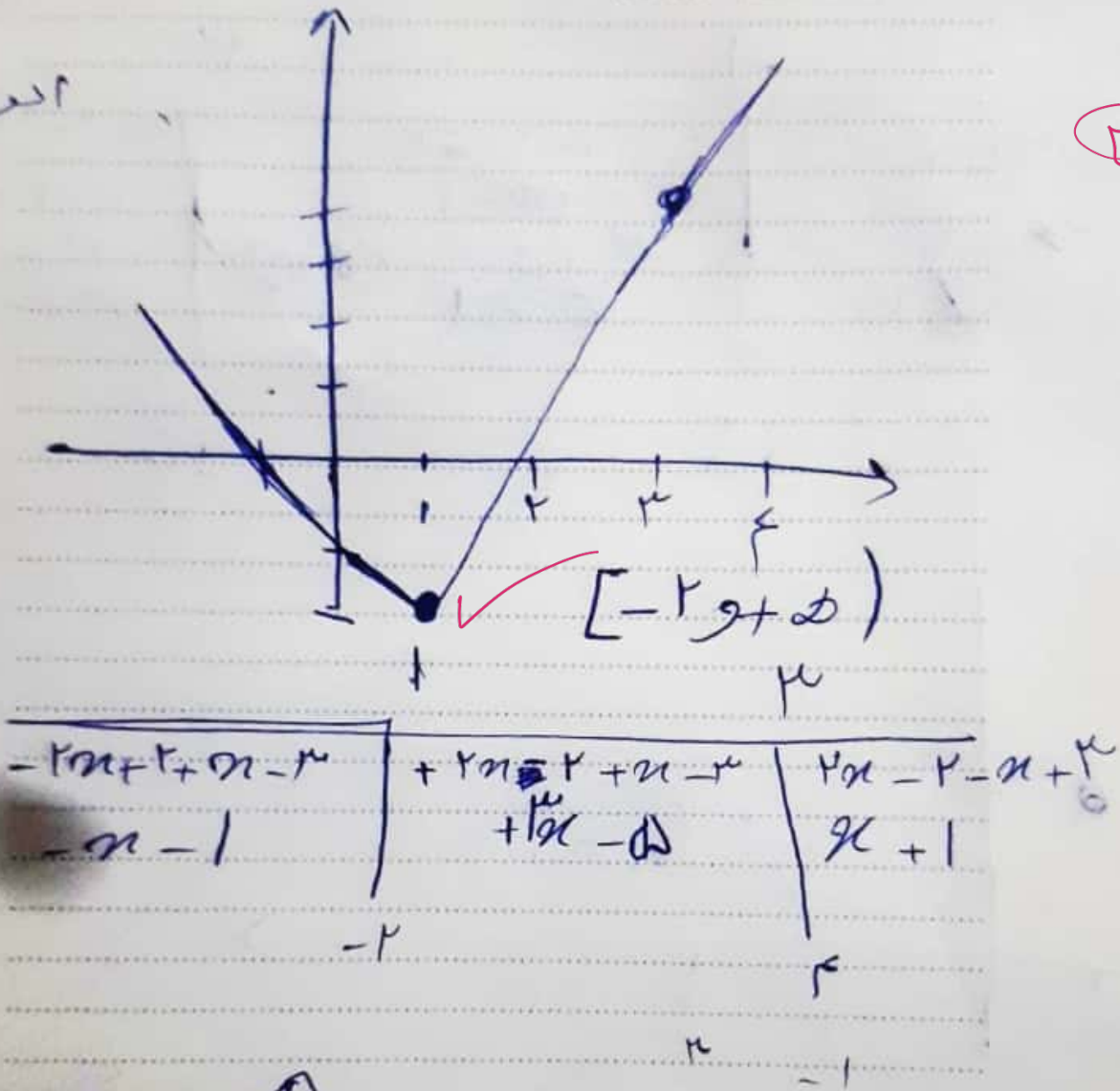
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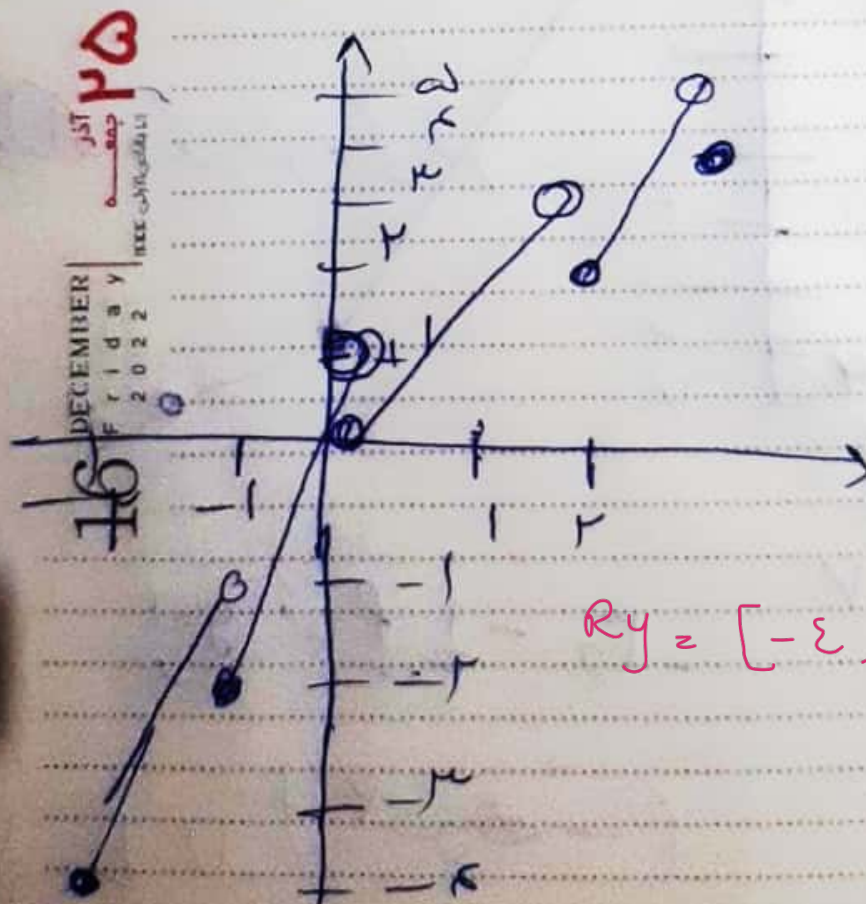
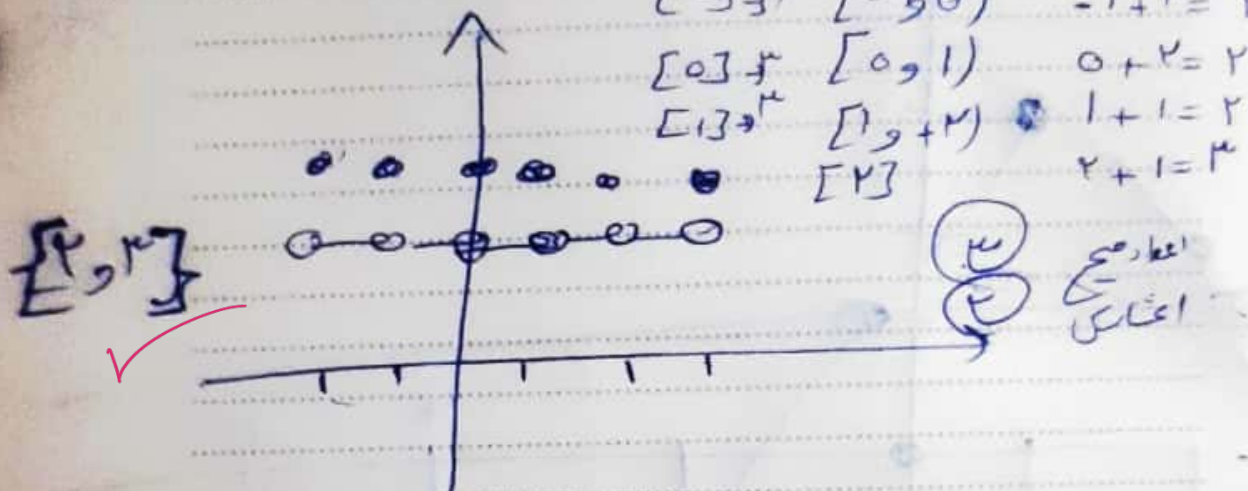
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1, 28 (9)

$[1]_3^{\mathbb{Z}} \quad [-1, -1) \quad -1 + \mathbb{Z} = \mathbb{Z}$
 $[0]_3^{\mathbb{Z}} \quad [-1, 0) \quad -1 + \mathbb{Z} = \mathbb{Z}$
 $[0]_3^{\mathbb{Z}} \quad [0, 1) \quad 0 + \mathbb{Z} = \mathbb{Z}$
 $[1]_3^{\mathbb{Z}} \quad [1, 2) \quad 1 + \mathbb{Z} = \mathbb{Z}$
 $[2]_3^{\mathbb{Z}} \quad [2, 3) \quad 2 + \mathbb{Z} = \mathbb{Z}$



$$Ry = [-\varepsilon, \delta)$$

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الف

$$\begin{array}{l} \xrightarrow{\text{max}} 1 \\ \xrightarrow{\text{min}} -1 \end{array}$$

$+1$ $+ \mu$

$$L \rightarrow \frac{-b}{2a} = \frac{+1}{2} \rightarrow \frac{\mu}{2}$$

$$\left[\frac{\mu}{2}, \mu \right]$$

ب)

$$\begin{array}{l} \xrightarrow{\text{max}} +1 \\ \xrightarrow{\text{min}} 0 \end{array}$$

$\rightarrow \mu$ $\rightarrow 1$

$$\xrightarrow{\frac{-b}{2a}} -\frac{1}{2} \times$$

$$\left[1, \mu \right]$$