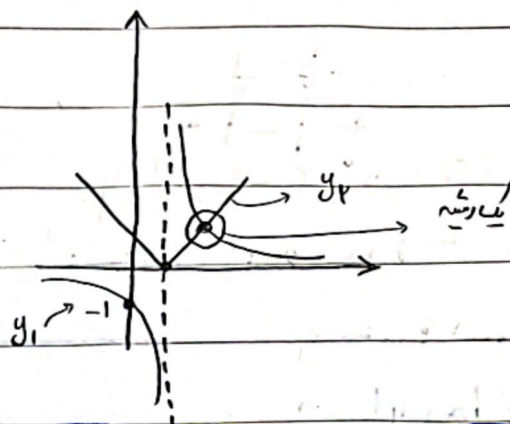


سارینا استانی - یازدهم فصل - شماره ۱ (۲۵)

$$y_1 = \frac{1}{x-1} \quad y_2 = \frac{1}{x-1}$$

$$\frac{1}{x-1} \rightarrow \text{مجاوب قاسم} = 1$$

$$\frac{1}{x-1} \rightarrow \text{مجاوب انقی} = 0$$



۱) $\left| \frac{x-1}{2} \right| < 2 \quad -2 < \frac{x-1}{2} < 2$

$$-2 < \frac{x-1}{2}$$

$$\rightarrow \frac{x-1}{2} + 2$$

$$\rightarrow \frac{x-1+4}{2}$$

$$\rightarrow \frac{x+3}{2}$$

$$\rightarrow \frac{1}{2} + \frac{1}{2} = 1$$

$$\frac{x-1}{2} < 2$$

$$\rightarrow \frac{x-1}{2} - 2$$

$$\rightarrow \frac{x-1-4}{2}$$

$$\rightarrow \frac{x-5}{2}$$

$$\rightarrow \frac{1}{2} - \frac{1}{2} = 0$$

$$\rightarrow \frac{1}{2} - \frac{1}{2} = 0$$

$$(II) \rightarrow (-\infty, 0) \cup \left(\frac{1}{2}, +\infty\right)$$

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

$$(I) \cap (II) \rightarrow \left(\frac{1}{2}, +\infty\right)$$

۲) $\left| \frac{x-2}{x+1} \right| > 1$

$$\frac{x-2}{x+1} > 1 \rightarrow \frac{x-2}{x+1} - 1 > 0$$

$$\rightarrow \frac{x-2-x-1}{x+1} > 0$$

$$\rightarrow \frac{-2x-3}{x+1} > 0$$

$$\rightarrow \frac{-2}{1} - \frac{3}{1} = -5$$

$$\rightarrow \frac{-2}{1} - \frac{3}{1} = -5$$

$$(I) \rightarrow \left(-\frac{3}{2}, -\frac{1}{2}\right)$$

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$$\frac{a-r}{r+1} < -1 \rightarrow \frac{a-r}{r+1} + 1 < 0$$

$$\frac{a-r+1}{r+1} < 0$$

$$(II) \rightarrow \left(-\frac{1}{r}, \frac{1}{r}\right)$$

$$\frac{r-1}{r+1} < 0$$

$$(I) \cup (II) \rightarrow a \in \left(-r, -\frac{1}{r}\right) \cup \left(-\frac{1}{r}, \frac{1}{r}\right)$$

$$a^r < |a+4|$$

$$a^r - a - 4 < 0$$

$$(a-r)(a+r) < 0$$

$$(I) \rightarrow (-r, r)$$

$$a+4 < -a^r$$

$$\rightarrow a^r + a + 4 < 0$$

$$\Delta = 1 - 16 < 0$$

$$|a - \alpha| < \beta \rightarrow -\beta < a - \alpha < \beta \rightarrow \alpha - \beta < a < \alpha + \beta$$

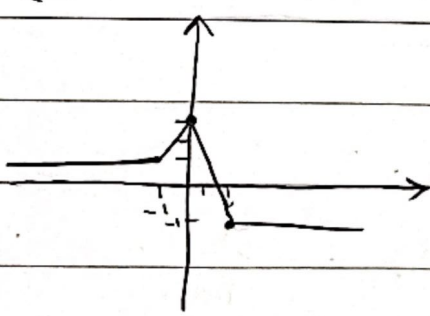
$$\begin{cases} \alpha - \beta = r \\ \alpha + \beta = r \end{cases}$$

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

$$y = |a+1| - |ra| + |a-r|$$

$$-1 < 0 < r$$

$$\begin{array}{c|c|c|c} -1 & 0 & r & \\ \hline -a-1+ra & a+1-ra & a+1-ra & a+1-ra+a-r \\ -a+r & -a+r & -a+r & = -1 \\ -1 & -ra+r & = -ra+r & \end{array}$$



$$\text{شیب} + \text{شیب} \rightarrow r-1$$

Scanned with

$$y = \left| \frac{1}{r} x \right| - r$$

سوال ٥

$$\left| \frac{x}{r} \right| - r = \left| \frac{x}{r} + r \right| - 1$$

$$|t| - |t+r| = 1$$

$$|t| = 1 + |t+r| \xrightarrow{\text{ربط}} 1 + \cancel{t} + r + \cancel{t} + r + t + r$$

$$4t = -9 \rightarrow t = -\frac{9}{4}$$

$$\frac{1}{r} x = -\frac{9}{r} \rightarrow \boxed{x = -9}$$

$$\text{الف) } f(x) = [|1-x| - |x+r|]$$

سوال ٤

$$\begin{array}{cc|c} -r & 1 & \\ \hline 1-x+r+x & 1-x-x-r & x-1-x-r \\ = a & = -2x-r & = -a \end{array}$$

$$-a \leq |1-x| - |x+r| \leq a \quad R_f = [|1-x| - |x+r|]$$

$$R_f = \{ -a, -a-r, -r, -r, -1, 0, 1, r, r, a \}$$

$$\text{ب) } f(x) = \frac{1}{x} - \left[\frac{x+1}{x} \right] = \frac{1}{x} - \left[\frac{1}{x} \right] - 1$$

$$0 \leq t < 1, -1 \leq t-1 < 0 \rightarrow R_f = [-1, 0)$$

$$\text{الف) } y = [-r_n] - 1 \quad x \in (-1, 1) \quad r_n \in (-2, 2) \quad \text{سوال ٧}$$

$$-2 < r_n < -1 \rightarrow -1 < -r_n < 2 \rightarrow [-r_n] = 1$$

$$y = 0 \quad -1 < x \leq -\frac{1}{r}$$

$$-1 < r_n \leq 0 \rightarrow 0 \leq -r_n < 1 \rightarrow [-r_n] = 0$$

$$y = -1 \quad -\frac{1}{r} < x \leq 0$$

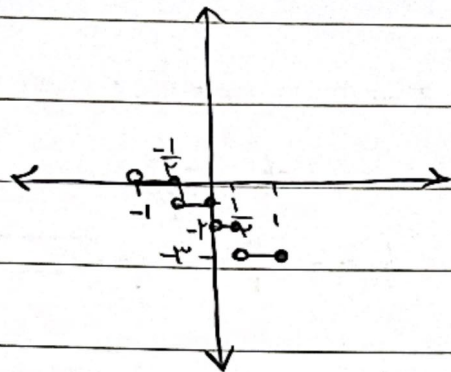
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$$0 < x \leq 1 \rightarrow -1 \leq -x < 0 \rightarrow [-x] = -1 \rightarrow y = -1$$

$$0 < x < \frac{1}{r}$$

$$1 < x \leq r \rightarrow -r \leq -x < -1 \rightarrow [-x] = -r \rightarrow y = -r$$

$$\frac{1}{r} < x < 1$$



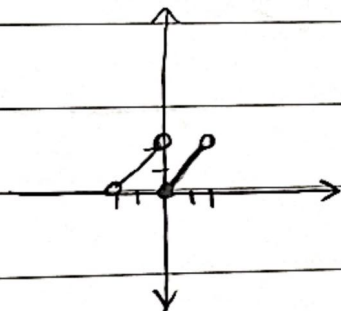
ب) $y = x - r \left[\frac{x}{r} \right], x \in (-r, r)$

$$-r < x < r \rightarrow -1 < \frac{x}{r} < 1$$

$$-1 < \frac{x}{r} < 0 \rightarrow \left[\frac{x}{r} \right] = -1 \rightarrow y = x + r, -r < x < 0$$

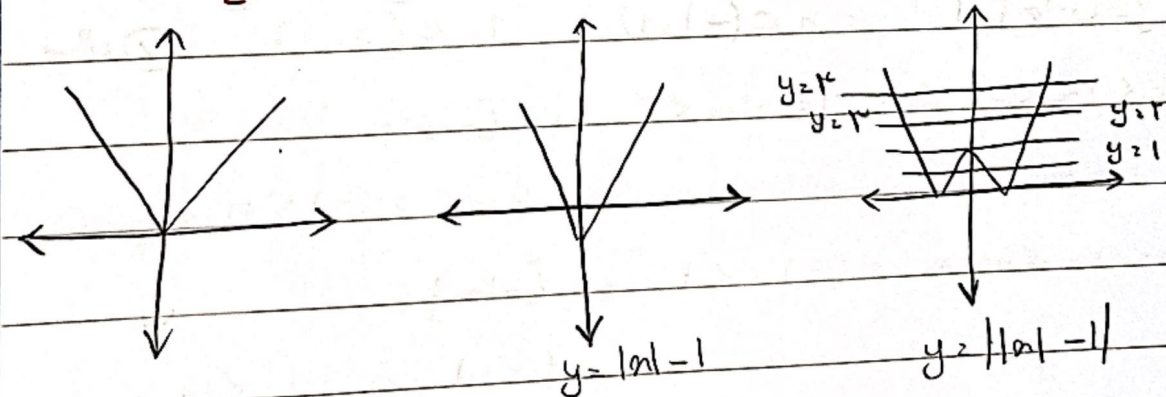
$$0 \leq \frac{x}{r} < 1 \rightarrow \left[\frac{x}{r} \right] = 0 \rightarrow y = x, 0 \leq x < r$$

x/y	y
$\frac{-r}{r}$	$\frac{0}{r}$
$\frac{0}{r}$	$\frac{0}{r}$
$\frac{r}{r}$	$\frac{0}{r}$

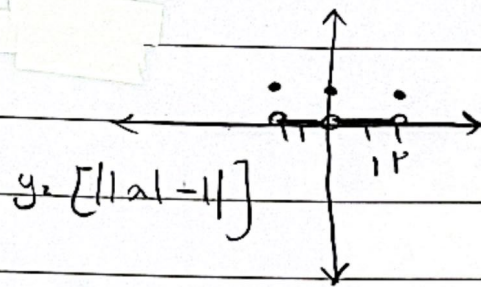


الف) $y = [|x| - 1]$ $x \in [-r, r]$

سؤال ٨

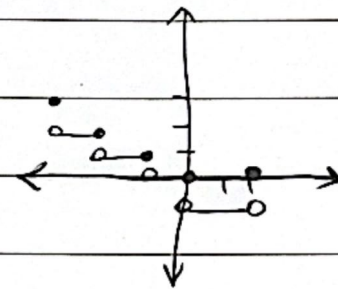
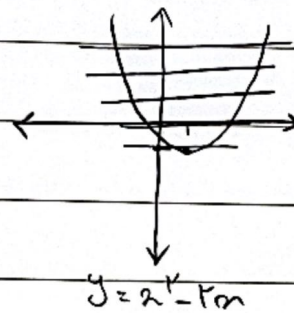


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1.) $y = [x^2 - 2]$ $x \in [-1, 2]$

$\begin{vmatrix} -b \\ ra \\ -1 \end{vmatrix}$



$a + [b] = \mathbb{R}, \mathbb{Y} \quad b - [a] = \mathbb{R}, \mathbb{Y}$

Yellow

$a + [b] = \mathbb{R}, \mathbb{Y} \quad [a] = x \quad a = x + 0,1 \mathbb{R}$

$b - [a] = \mathbb{R}, \mathbb{Y} \quad [b] = y \quad b = y + 0,1 \mathbb{R}$

$x + 0,1 \mathbb{R} + y = \mathbb{R}, \mathbb{Y}$
 $y + 0,1 \mathbb{R} - x = \mathbb{R}, \mathbb{Y} \rightarrow \begin{cases} x + y = \mathbb{R} \\ y - x = \mathbb{R} \end{cases}$

$\mathbb{R}, \mathbb{Y} \rightarrow \boxed{y = \mathbb{R}}$

$a + b = \mathbb{R}, \mathbb{Y}$



$b = \mathbb{R}, \mathbb{Y} \quad a = \mathbb{R}, \mathbb{Y} \rightarrow \boxed{a = \mathbb{R}}$



$(1 + \sqrt{2})^4 + (1 - \sqrt{2})^4 = 19$

10x/100

$[(1 + \sqrt{2})^4] = [19 - (1 - \sqrt{2})^4] \rightarrow [(1 + \sqrt{2})^4] = 19$

بعضی اعداد را می توانیم به صورت زیر بنویسیم