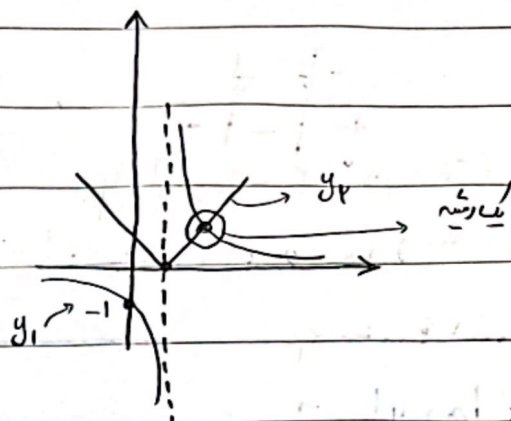


سازمان اسفندی - یازدهم رتبه - شماره ثبت (۲۵)

y_1
 $\frac{1}{a-1}$

$\frac{1}{a-1} \rightarrow$ مجانب قائم
 $\frac{1}{a-1} \rightarrow$ مجانب افقی



الف) $\left| \frac{2a-1}{a} \right| < 2$ $-2 < \frac{2a-1}{a} < 2$

$-2 < \frac{2a-1}{a}$
 $\bullet \frac{2a-1}{a} + 2$
 $\bullet \frac{2a-1+2a}{a}$
 $\bullet \frac{4a-1}{a}$
 $\bullet \frac{1}{4}$
 $\bullet \frac{1}{4} +$
 $\bullet \frac{1}{4} +$

$\frac{2a-1}{a} < 2$
 $\frac{2a-1}{a} - 2 < 0$
 $\frac{2a-1-2a}{a}$
 $\frac{-1}{a} < 0$
 $\bullet \frac{1}{2}$
 $\bullet \frac{1}{2} +$
 $\bullet \frac{1}{2} +$

(II) $\rightarrow (-\infty, 0) \cup (\frac{1}{4}, +\infty)$

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

مجموعه جواب نهایی $\rightarrow (I) \cap (II) \rightarrow (\frac{1}{4}, +\infty)$

ب) $\left| \frac{a-2}{a+1} \right| > 1$

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

$\frac{-2a-3}{a+1} > 0$
 $\frac{-2a-3}{a+1} - \frac{1}{4}$
 $\frac{-8a-12-a-4}{4(a+1)}$
 $\frac{-9a-16}{4(a+1)}$

(I) $\rightarrow (-\infty, -\frac{1}{9})$

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

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

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

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

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

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

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

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

$$-r < a < r$$

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

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

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

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

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

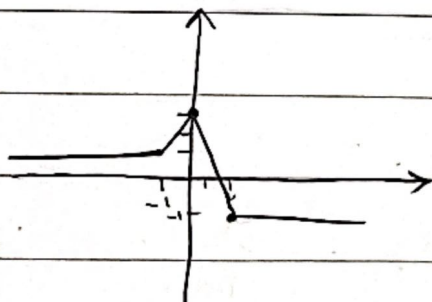
$$\begin{cases} \alpha - \beta = r \\ \alpha + \beta = r \end{cases}$$

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

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

$$-1 < a < 0 < r$$

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



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

Scanned with

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

سوال ٥

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

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

٣

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

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

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

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

سوال ٤

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

$$-a \leq |1-x| - |x+r| \leq a$$

$$R_f = [|1-x| - |x+r|]$$

٣

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

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

$$\hookrightarrow 1 + \frac{1}{x}$$

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

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

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

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

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

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

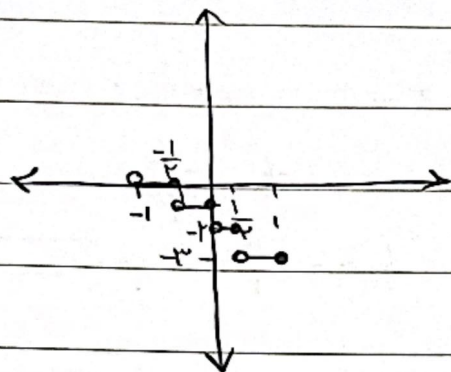
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$$0 < r \leq 1 \rightarrow -1 \leq -r \leq 0 \rightarrow [-r] = -1 \rightarrow y = -r$$

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

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

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



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

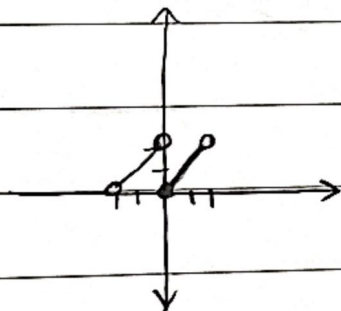
$$-r < x < r \rightarrow -1 < \frac{x}{r} < 1$$

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

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

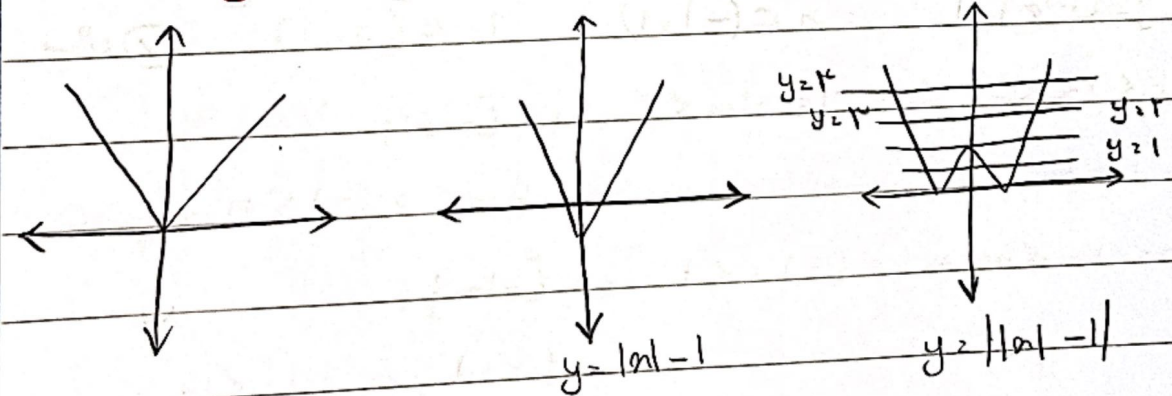
x/y	y
$-r$	0
0	r

x/y	y
0	0
r	r

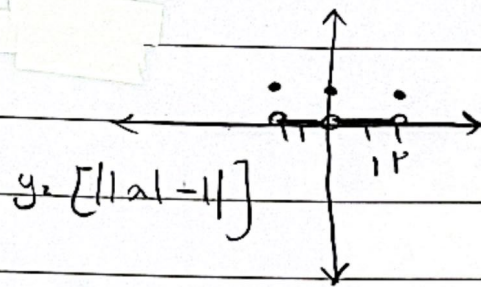


الف) $y = [|x| - 1]$ $x \in [-2, 2]$

سؤال ٨

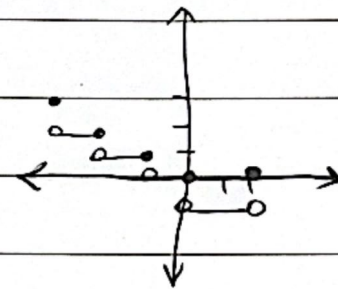
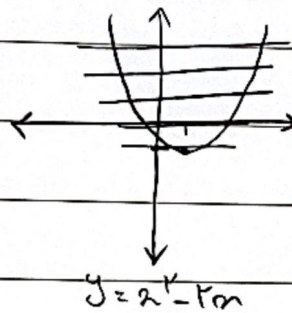


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1.) $y = [x^2 - 1]$ $x \in [-1, 1]$ 5

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



$a + [b] = K, Y$ $b - [a] = P, K$ @ Follow

$a + [b] = K, Y$ $[a] = x$ $a = x + 0, K =$

$b - [a] = P, K$ $[b] = y$ $b = y + 0, K =$

$x + 0, K + y = K, Y$
 $y + 0, K - x = P, K \rightarrow \begin{cases} x + y = K \\ y - x = P \end{cases}$ 5

$K, Y = 4 \rightarrow \boxed{y = 3}$

$a + b = K, Y$ $\leftarrow$

$b = P, K$ $a = 1, K$ $a < 1$

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

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

بعض اوقات بعضی چیزها را می بینیم