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عزیزم دوست

منشی کند

$$\frac{1}{n-1} = |n-1|$$

$n=2$ نقطه

$$\frac{1}{n-1} = -n+1$$

$$-n^2 + 2n - 2 = 0$$

$$\Delta < 0$$

$$\frac{1}{n-1} = n-1$$

$$n^2 - 2n = 0 \rightarrow n=0 \text{ X}$$

$$\rightarrow n=2$$

1

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$$\frac{|2n-1|}{n} \leftarrow r$$

$$|2n-1| < r|n|$$

$$(2n-1)^2 < 4n^2$$

$$4n^2 + 1 < 0$$

$$\Rightarrow \left| \frac{n-2}{2n+1} \right| > 1$$

$$|n-2| > |2n+1|$$

$$(n-2)^2 > (2n+1)^2$$

$$n^2 - 4n + 4 > 4n^2 + 4n + 1$$

$$3n^2 + 8n - 3 < 0 \rightarrow n = -3$$

$$n = \frac{1}{3}$$

$$\rightarrow \text{نقطه} \Rightarrow (-3, -\frac{1}{3}) \cup (-\frac{1}{3}, \frac{1}{3}) \quad 2n+1 \neq 0 \rightarrow n \neq -\frac{1}{2}$$

$$|n-\alpha| < \beta$$

$$n+4 > n^2 \rightarrow n^2 - n - 4 < 0 \Rightarrow n=2 \rightarrow \frac{-2 \pm \sqrt{4+16}}{2} = (-2, 3)$$

$$n+4 < -n^2 \rightarrow n^2 + n + 4 < 0 \Rightarrow \Delta < 0 \rightarrow \text{نقطه}$$

$$-2 < n < 3$$

$$\frac{1}{3} < n < \frac{1}{2} \Rightarrow |n - \frac{1}{3}| < \frac{1}{6} \rightarrow n = \frac{1}{3}$$

$$n^2 < (n+4) \quad 2$$

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$$y = |n+1| - |2n| + |n-2|$$

2

-1	0	2
$-(n+1) + 2n - (n-2) = 1$	$(n+1) + 2n - (n-2) = 2n+3$	$(n+1) - 2n - (n-2) = -2n$
$\rightarrow n = -1$	$n = 0$	$n = 2$
$y = -2 + 3 = 1$	$y = 1 + 3 = 4$	$y = 4 - 2 = 2$

$$\max + \min = 4 - 2 = 2$$

$$y = \left| \frac{1}{r}n \right| - r \rightarrow y = \left| \frac{n+r}{r} \right| - r+1 = \left| \frac{n+r}{r} \right| - 1 \Rightarrow \left| \frac{n}{r} \right| - r = \left| \frac{n+r}{r} \right| \quad 3$$

$$\left| \frac{n}{r} \right| = \left| \frac{n+r}{r} \right| + 1 \Rightarrow |n| = |n+r| + 1 \quad n > 0 \rightarrow n = n+r+1 \rightarrow 0 = r$$

$$-r \leq n < 0 \rightarrow -n = n+r+1 \rightarrow n = -r \quad n < -r \rightarrow -n = -(n+r)+r = 0 = -r \quad \text{X}$$

$$n = -r$$

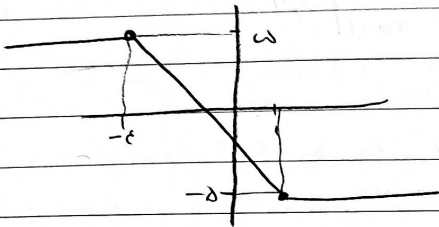
ex) $f(x) = [|x| - |x+r|]$ $\frac{a}{y} \mid \begin{array}{c} 1-r \\ -a \end{array} \frac{-a}{y} \rightarrow f(a) = \frac{1}{a} - \left[\frac{a+r}{a} \right]$ (4)

$1-a+r$	$1-a-a-r$	$a-1-a-r$
a	$-r-a-r$	$-a$

$\frac{1}{a} - \left[1 + \frac{1}{a} \right] = \frac{1}{a} - \left[\frac{a+1}{a} \right] - 1$

$R_1 = \{ -a, -r, r, -r, -1, a, 1, r, r, a \}$

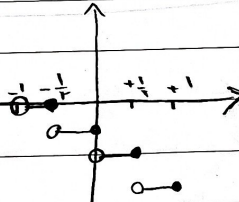
$R_2 = [1, 0]$



(5)

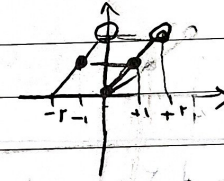
ex) $y = [-r, a] - 1$ $a \in (-1, 1)$

$-1 < a \leq -\frac{1}{r} \rightarrow y = 1 - 1 = 0$
 $-\frac{1}{r} < a \leq 0 \rightarrow y = 0 - 1 = -1$
 $0 < a \leq \frac{1}{r} \rightarrow y = -1 - 1 = -2$
 $\frac{1}{r} < a < 1 \rightarrow y = -r - 1 = -r$



$\rightarrow y = a - r \left[\frac{a}{r} \right]$

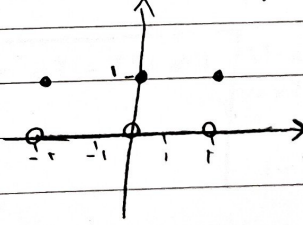
$a \in (-r, r) \rightarrow y = a - r(-1) = a + r$
 $-r < a < 0 \rightarrow y = a - r(-1) = a + r$
 $0 \leq a < r \rightarrow y = a - r(0) = a$



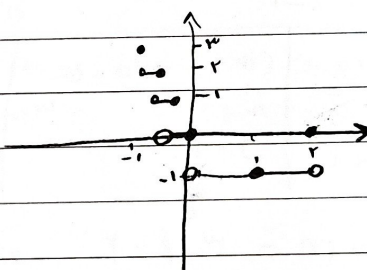
(6)

$y = [|a| - 1]$ $a \in [-r, r]$

$0 < a \leq 1 \rightarrow y = 0$
 $1 < a < r \rightarrow y = 0$
 $a = r \rightarrow y = 1$



$\rightarrow y = [a^r - r, a]$ $a \in [-1, r]$



(7)

$a + (b - 0, r) = r, r$ $a + b = 1, r + r, r = [r, r] + b = ?$ $b - [a] = r, r$ $a + [b] = r, r$ (9)
 $b - (a - 0, r) = r, r$ $b - [a] = r, r$ $\rightarrow r, b = 1, r + 1, r = 2, r$
 $a + [b] = r, r$ $b = 1, r$ $a = 1, r$

$(1 + \sqrt{r})^4 + (1 - \sqrt{r})^4 = 19$ $(1 + \sqrt{r})^4 + (1 - \sqrt{r})^4 = 19$ (10)
 $(1 + \sqrt{r})^4 = 19 - (1 - \sqrt{r})^4$ $-1 < 1 - \sqrt{r} < 0 \rightarrow 0 < (1 - \sqrt{r})^4 < 1$

$[(1 + \sqrt{r})^4] = [19 - 0, 1] = 19$