

٢. التقييم

الطرح ما يلي

$$\frac{1}{n-1} = |n-1| \rightarrow \frac{1}{n-1} = n-1 \quad n > 1$$

نقطة $n=0$ $\rightarrow$ $n=0$

$$(n-1)^2 = 1 \rightarrow n^2 - 2n + 1 = 1 \rightarrow n(n-2) = 0$$

$$\rightarrow \frac{1}{n-1} = -(n-1) \rightarrow n \leq 1$$

$$(n-1)^2 = 1 \rightarrow n^2 - 2n + 1 = 1 \rightarrow n(n-2) = 0$$

نقطة $n=2$

$$\text{الف) } \left| \frac{n-1}{n} \right| < \epsilon \rightarrow \frac{n-1}{n} < \epsilon \rightarrow n-1 < \epsilon n$$

$$-1 < 0 \quad \checkmark \Rightarrow \left(\frac{1}{\epsilon}, +\infty \right)$$

$$\rightarrow \frac{n-1}{n} > -\epsilon \rightarrow n-1 > -\epsilon n \rightarrow \epsilon n > 1 \rightarrow n > \frac{1}{\epsilon}$$

$$\text{ب) } \left| \frac{n-2}{n+1} \right| > 1 \rightarrow \frac{n-2}{n+1} < -1 \rightarrow n-2 < -n-1$$

$$2n < 1 \rightarrow n < \frac{1}{2}$$

$$\therefore n \neq \frac{1}{\epsilon}$$

$$\rightarrow \frac{n-2}{n+1} > 1 \rightarrow n-2 > n+1 \Rightarrow (-\infty, \frac{1}{2}) - \left\{ \frac{1}{\epsilon} \right\}$$

$$|n-1|^2 > |n+1|^2 \rightarrow n^2 - 2n + 1 < n^2 + 2n + 1 \rightarrow -4n < 0 \rightarrow -1 < n < \frac{1}{\epsilon}, n \neq \frac{1}{\epsilon}$$

$$n^2 < |n+4| \rightarrow n^2 < n+4 \rightarrow n^2 - n - 4 < 0$$

$$(n-2)(n+2) < 0 \rightarrow \frac{-2}{-1-1} = 1$$

$$\rightarrow n^2 < -n-4 \rightarrow n^2 + n + 4 < 0 \rightarrow \Delta < 0 \rightarrow \text{لا حل}$$

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

$$-5 < n < 5$$

$$\boxed{\alpha = -5}$$

2. صيف

المطلوب

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

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-1	0	2	
$-n-1+n-2-n$	$n+1+n-2-n$	$n+1-n+2$	$n+1-n+n-2$
1	$2n+3$	$-2n+3$	-1

نقاط ص $\rightarrow$ $\max = 3$
 $\min = -1$

$\max + \min = 3 + (-1) = 2$

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$$y = \left| \frac{1}{\varepsilon} n \right| - 2 \quad y' = \left| \frac{1}{\varepsilon} n + \varepsilon \right| - 1$$

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$$\left| \frac{1}{\varepsilon} n \right| - 2 = \left| \frac{1}{\varepsilon} n + \varepsilon \right| - 1$$

$$\frac{1}{\varepsilon} n^2 + 14 + \varepsilon n = \frac{1}{\varepsilon} n^2 + | -2 | \frac{1}{\varepsilon} n$$

$$\varepsilon n + 14 = -2 \left| \frac{1}{\varepsilon} n \right| \rightarrow -cn - \frac{14}{c} = \left| \frac{1}{\varepsilon} n \right|$$

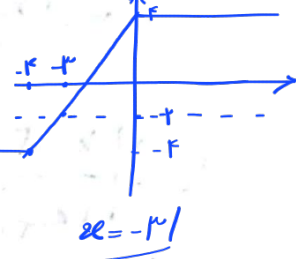
$$\frac{1}{\varepsilon} n = -cn - \frac{14}{c} \rightarrow n = -2$$

$$\frac{1}{\varepsilon} n = cn + \frac{14}{c} \rightarrow n = -2$$

$$\boxed{n = -2}$$

$$y' = \left| \frac{1}{\varepsilon} n + \varepsilon \right| - 1 = y$$

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

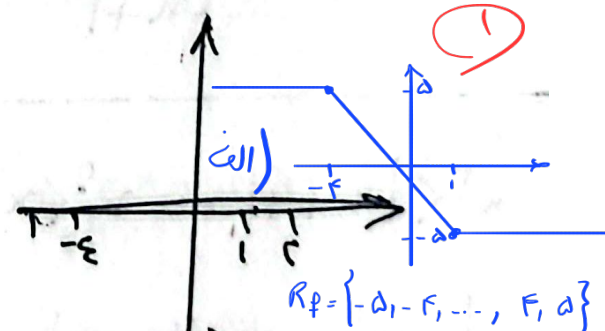


0,0

$$الف) f(n) = [|1-n| - |n+\varepsilon|]$$

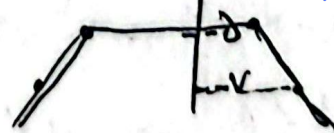
-ε	1
$cn+3$	$-cn-3$
-2	

نقاط ص



$$R_f = \{-2, -1, \dots, 1, 2\}$$

$$\mathbb{R} = \{ n \in (-\infty, -2) \mid n \in \mathbb{Z} \}$$



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

$\downarrow$ $\downarrow$
 $\frac{1}{n} + \frac{1}{n}$ $\rho \rightarrow 0 \leq \rho < 1$

$\mathbb{R} = [1, 2]$

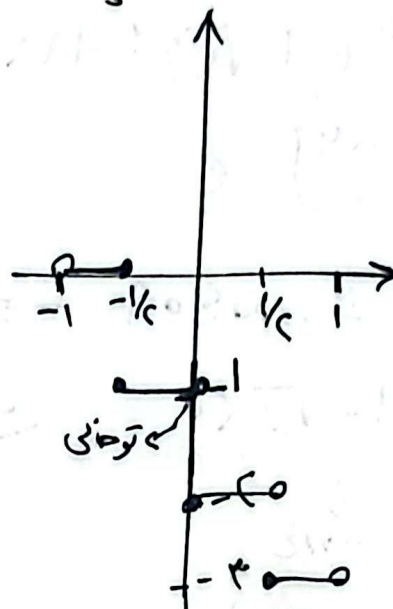
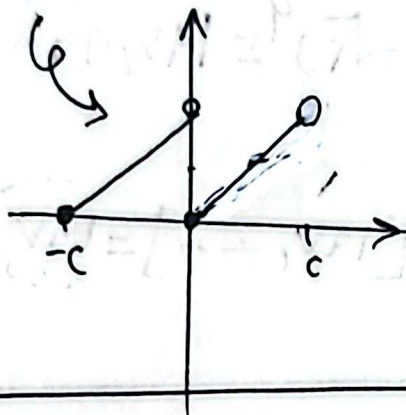
$$ب) f(n) = \frac{1}{n} - \left[\frac{1}{n} \right] - 1 \rightarrow R_f = [-1, 1]$$

تالیف ۲۰

اصول ریاضی

الف) $y = [-cn] - 1 \quad n \in (-1, 1)$

ب) $y = n^{-1} \left[\frac{n}{c} \right] \quad n \in (-1, 1)$

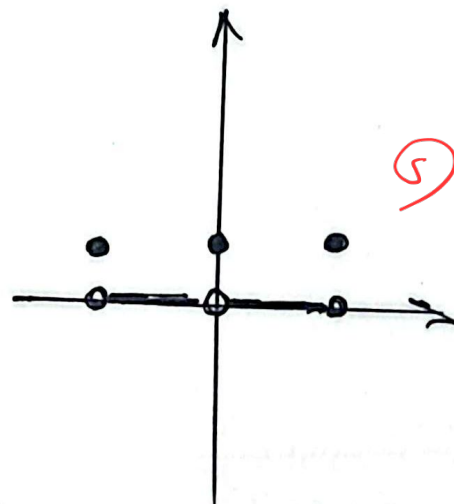
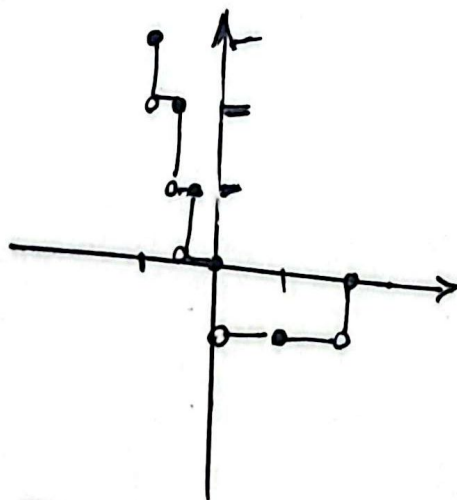


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الف) $y = [|n| - 1] \quad n \in [-1, 1]$

ب) $y = [n^c - 1], \quad n \in [-1, 1]$



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$a + [b] = \varepsilon, c \quad , \quad b - [a] = \varepsilon, \varepsilon$

$\hookrightarrow a = [1, 2]$

$\hookrightarrow b = [0, \varepsilon]$

$\xrightarrow{\text{جایگزینی}} [b] = 0 \rightarrow a = \varepsilon, c \quad \text{و} \quad \text{و}$

$[b] = 2 \rightarrow a = \varepsilon, c \quad \text{و} \quad \text{و}$

$[b] = 2 \rightarrow a = 1, c \quad \text{و} \quad \text{و}$

$b = \varepsilon, \varepsilon$
 $a = 1, c$

$a + b = \varepsilon, \varepsilon$

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کالیف ۲.

اطهر ساری

-۱۵

$$(1+\sqrt{5})^4 + (1-\sqrt{5})^4 = 198$$

$$[(1+\sqrt{5})^4] = e$$

$$1-\sqrt{5} \approx 0,00409 \rightarrow (1-\sqrt{5})^4 \approx 197,9959$$

$$-1 < 1-\sqrt{5} < 0$$

$$\downarrow$$

$$-0,618$$

$$\Rightarrow [197,9959] = 197$$

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