

آرشداد یارسی یازهم دفتر A تالیف شهاب ۲۰

نقطه یک ریشه $x=2$ دارد.

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

$$-x^2 + 2x - 2 = 0$$

$\Delta < 0$
ریشه ندارد

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

$$x^2 - 2x = 0$$

$$x=0 \rightarrow \text{غیر قابل قبول} \rightarrow x > 1$$

$$\boxed{x=2}$$

الف) $\left| \frac{2n-1}{x} \right| < 2 \rightarrow |2n-1| < 2|x| \rightarrow (2n-1)^2 < 4x^2$

$$\rightarrow 4n^2 - 4n + 1 < 4x^2 \rightarrow -4n + 1 < 0 \rightarrow x > \frac{1}{4}, x \neq 0 \rightarrow \text{مجموعه جواب} = \left(\frac{1}{4}, +\infty \right)$$

ب) $\left| \frac{x-2}{2n+1} \right| > 1 \rightarrow |x-2| > |2n+1| \rightarrow (x-2)^2 > (2n+1)^2$

$$\rightarrow x^2 - 4x + 4 > 4n^2 + 4n + 1 \rightarrow 0 > 4n^2 + 4n - 3 \rightarrow n = -3, n = \frac{1}{4}$$

$$\rightarrow \begin{array}{c|c} -3 & \frac{1}{4} \\ \hline +\phi & -\phi+ \end{array} \rightarrow (-3, \frac{1}{4}) \quad \textcircled{1} \quad 2n+1 \neq 0 \rightarrow 2n \neq -1 \rightarrow n \neq -\frac{1}{2} \quad \textcircled{2}$$

$$\textcircled{1} \cap \textcircled{2} = (-3, -\frac{1}{2}) \cup (\frac{1}{4}, \frac{1}{3})$$

$x^2 < |x+y| \rightarrow x+y > x^2 \rightarrow x^2 - x - y < 0 \rightarrow x=2, x=-2 \rightarrow \begin{array}{c|c} -2 & 2 \\ \hline +\phi & -\phi+ \end{array} \nearrow (-2, 2)$

غیر قابل قبول $\rightarrow$ همیشه مثبت $\rightarrow$ ریشه ندارد $\rightarrow \Delta < 0$

$$-2 < x < 2 \rightarrow -\frac{\omega}{2} < x - \frac{1}{2} < \frac{\omega}{2} \rightarrow \left| x - \frac{1}{2} \right| < \frac{\omega}{2} \rightarrow x = \frac{1}{2}$$

$$x < -1 \rightarrow y = -(x+1) + 2x - (x-2) = 1 \quad x = -1 \rightarrow y = -2 + 3 = 1$$

$$-1 < x < 0 \rightarrow y = (x+1) + 2x - (x-2) = 2x + 3 \quad x=0 \rightarrow y = 1 + 2 = 3$$

$$0 < x < 2 \rightarrow y = (x+1) - 2x + (x-2) = -2x + 3 \quad x=2 \rightarrow y = 3 - 4 = -1$$

$$x > 2 \rightarrow y = (x+1) - 2x + (x-2) = -1$$

$$\max + \min = 3 - 1 = \boxed{2}$$

$$y = \left| \frac{n}{r} \right| - r \xrightarrow{\sim} y = \left| \frac{n+\varepsilon}{r} \right| - r + 1 = \left| \frac{n+\varepsilon}{r} \right| - 1 \quad -\omega$$

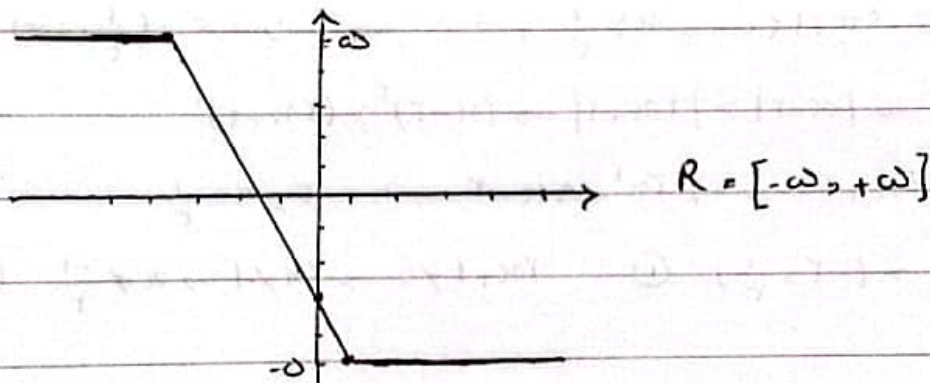
$$\left| \frac{n}{r} \right| - r = \left| \frac{n+\varepsilon}{r} \right| - 1 \rightarrow \left| \frac{n}{r} \right| = \left| \frac{n+\varepsilon}{r} \right| + 1 \rightarrow |n| = |n+\varepsilon| + r$$

$$n \geq 0 \rightarrow n = n + \varepsilon + r \rightarrow 0 = r \quad \times$$

$$-\varepsilon \leq n < 0 \rightarrow n = n + \varepsilon + r \rightarrow \boxed{n = -r} \quad \checkmark \quad \text{طول اصل برضای } -r = \varepsilon$$

$$n < -\varepsilon \rightarrow n = -(n + \varepsilon) + r \rightarrow 0 = -r \quad \times$$

$$\text{الف) } \left| 1 - n \right| - |n + \varepsilon| \rightarrow \left| \frac{-\omega}{\omega} \right| - \left| \frac{-\varepsilon}{\omega} \right| = \left| \frac{0}{-\varepsilon} \right| - \left| \frac{1}{-\omega} \right| = \left| \frac{r}{-\omega} \right| \quad -\varepsilon$$



$$\Rightarrow f(n) = [1 - n] - [n + \varepsilon] \rightarrow R = \{-\omega, -\varepsilon, -r, -r, -1, 0, 1, r, r, \varepsilon, \omega\}$$

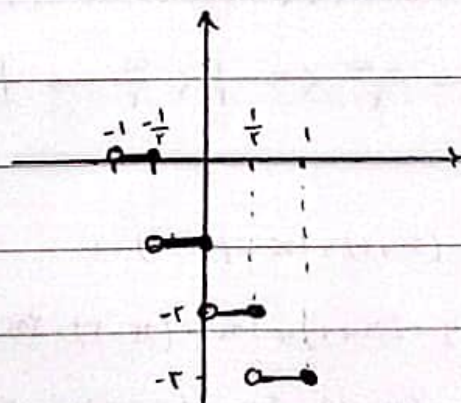
$$\text{ب) } f(n) = \frac{1}{n} - \left[\frac{n+1}{n} \right] = \frac{1}{n} - 1 - \left[\frac{1}{n} \right] \rightarrow \underbrace{a - [a]}_{(-1, 0]} \Rightarrow R = (-r, -1]$$

$$\text{الف) } -1 < n < -\frac{1}{r} \rightarrow y = 1 - 1 = 0$$

$$-\frac{1}{r} < n < 0 \rightarrow y = 0 - 1 = -1$$

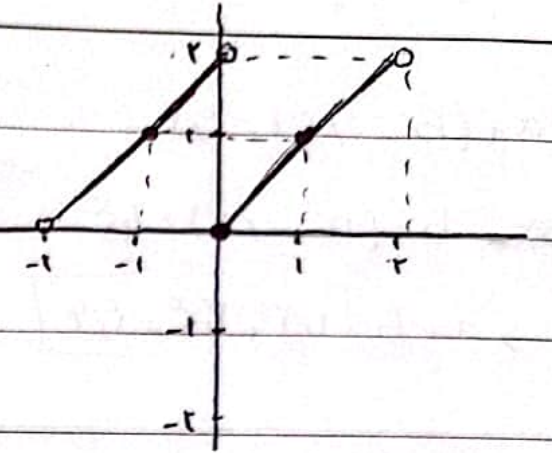
$$0 < n < \frac{1}{r} \rightarrow y = -1 - 1 = -2$$

$$\frac{1}{r} < n < 1 \rightarrow y = -r - 1 = -r$$

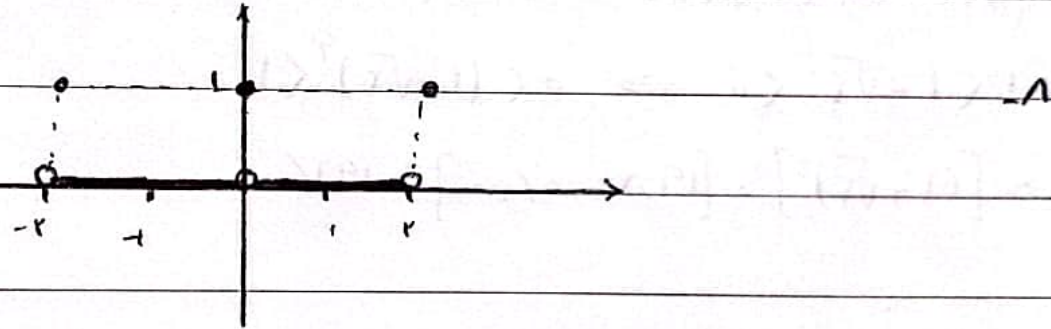


ب) $-r < x < 0 \rightarrow y = x - r(-1) = x + r$

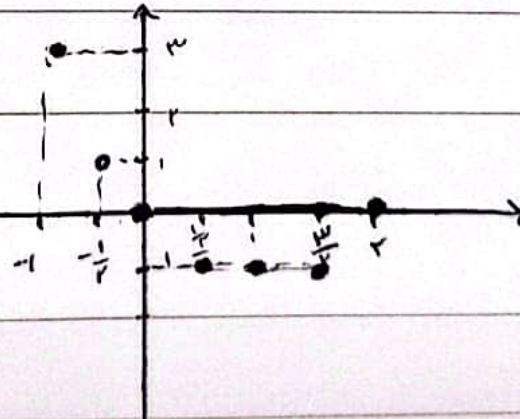
$0 \leq x < r \rightarrow y = x - r(0) = x$



الف)



ب)



Date :/...../.....



$$a + (b - 0.1\text{f}) = 8.2$$

$$\text{b - (a - 0.1r) = 7.8}$$

$$\Rightarrow 7b = 7.8 + 0.1r = 7.9 \rightarrow b = 1.1\text{f} \rightarrow a = 1.1$$

$$\rightarrow a + b = 1.1 + 1.1 = 2.2$$

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

$$-1 < 1 - \sqrt{r} < 0 \Rightarrow 0 < (1 - \sqrt{r})^4 < 1$$

$$\Rightarrow [(1 + \sqrt{r})^4] = [19\Omega - 0.1\text{m}] = 19\text{V}$$