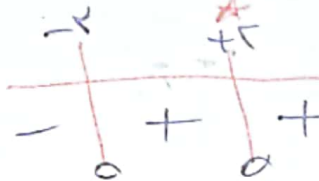
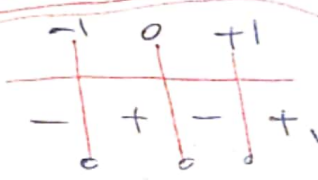


$f(n) = (n+1)^5 + (n-1)^5 + mn^5 + mn + mn \rightarrow$ تابع $\rightarrow$ $K=10, P=-11, h=\xi, m=-10$
 $g(n) = \{(\xi, m), (n, P+1), (P+2, -1), (-9, P+K) \} \rightarrow$ تابع $\rightarrow K+P+h=m$
 $f(n) = n^5 + 1 + 2n + 9n^5 + 1 - 5n + mn^5 + mn + mn \rightarrow 10n^5 - \xi n + 2 = -mn^5 - mn - mn$
 $m = -10, n = \xi, P+1 = m \rightarrow P = -11, P+K = -1 \rightarrow K = 10$

الف) $\sqrt{\frac{n-2}{n^2-5n^2-8}}$ $n^2 = t \rightarrow t^2 - 5t - 8 = (t-8)(t+2) \rightarrow \xi = t$
 $t > 0 \rightarrow t = \xi \checkmark, t = -2 \times \rightarrow t = \xi \rightarrow n = \pm \sqrt{\xi} \rightarrow$ بیش‌های انرجی
 $n-2 \rightarrow +2 =$  $(-2, +\infty)$
 $\checkmark - \{2\}$

ب) $f(n) = \frac{n^2+1}{\xi-2[-n]} \rightarrow \xi-2[-n] \neq 0 \rightarrow \xi \neq 2[-n]$
 $\xi = 2[-n] \rightarrow 2 \leq n < \infty \rightarrow -\infty < n \leq -2 \xrightarrow{\xi \neq 2[-n]} D_f = R - (-\infty, -2]$
 $D_f = R - (-\infty, -2]$

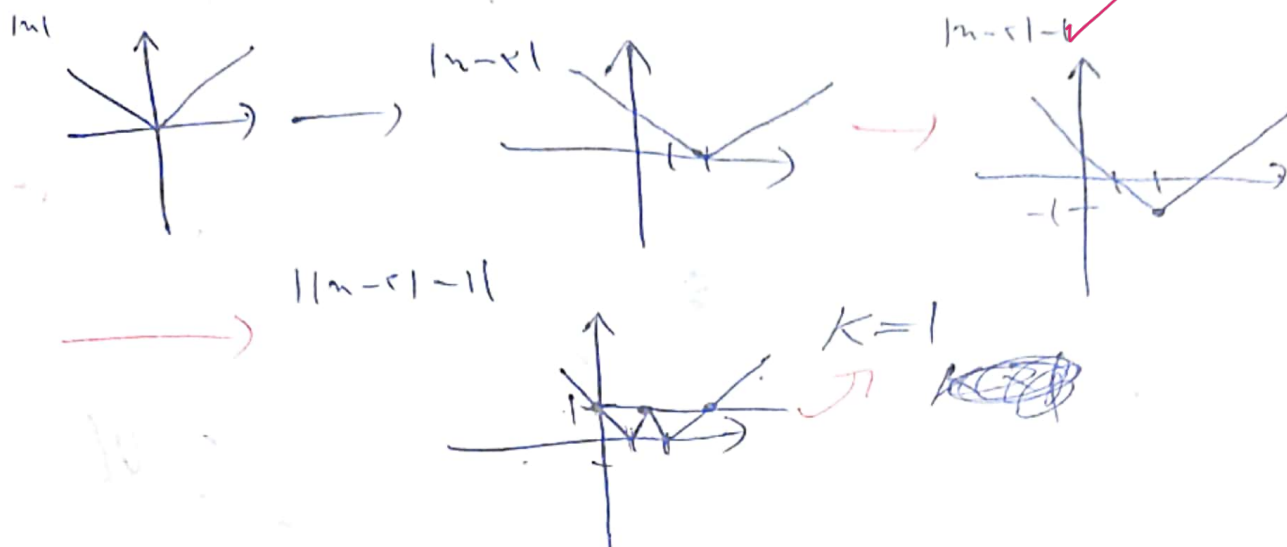
الف) $f(n) = \frac{\sqrt{n(n^2-1)}}{\sqrt{|n|+n}} \rightarrow n(n+1)(n-1) > 0 \rightarrow$ 
 $\sqrt{|n|+n} \rightarrow |n|+n > 0 \rightarrow R^+$
 $\bigcap \rightarrow (-1, +\infty) \rightarrow [1, +\infty)$
 $[0, +\infty) \cup [-1, 0]$

ب) $f(n) = \frac{\sqrt{|n-2|-n^2}}{|n|-1}$
 $|n-2| > n^2 \rightarrow n > 2 \rightarrow n^2 - n + 2 \leq 0$
 $n^2 < 2 \rightarrow n^2 + n - 2 \leq 0$
 $m \neq 1 \rightarrow n \neq -1$
 $(n+2)(n-1) \neq \leq 0 \rightarrow \Delta < 0$
 $\rightarrow$ نتایج ریشه‌ها را در $n \in [-2, +1]$
 $D_f(n) = [-2, +1] - \{-1\}$
 $D_f(n) = [-2, +1] - \{-1, 1\}$
 $\rightarrow$ به‌است بنویسید $[-1, 1] - \{1\}$

$$y = \frac{1}{|n-2|-1-k} \rightarrow \text{ساده‌ترین حالت } k=?$$

$$|n-2|-1-k=0 \rightarrow |n-2|-1=k$$

$$k=1$$



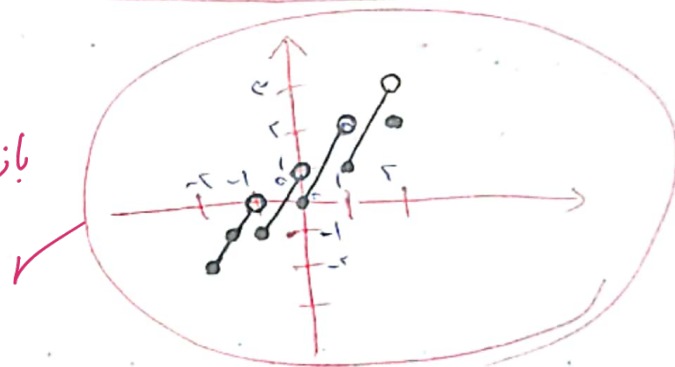
$$y = 2n - [n] \rightarrow [-2, 2] \text{ بازه}$$

$$-2 \rightarrow -2 \quad 1 \rightarrow 1 \text{ بازه بندی نبویس!}$$

$$-1, 0 \rightarrow -1 \quad 2 \rightarrow 2$$

$$-1 \rightarrow -1$$

$$0 \rightarrow 0$$



$$f(n) = \frac{n^2 - 2n + 2}{n+a} + b \quad f(n) = \frac{(n-2)(n-1)}{(n+a)} + b = n \rightarrow n+a = n-2$$

$$a = -1 \rightarrow n - 2 + b = n \rightarrow b = 2 \rightarrow a - b = -3$$

$$a = -2 \rightarrow n - 1 + b = n \rightarrow b = 1 \rightarrow a - b = -3$$

$$f(n) = \begin{cases} \frac{n^c + \sqrt{n} - n - 5}{n^5 - 1} ; n \neq \pm 1 & g(n) = n + c \\ \frac{an + 5}{n + b} ; n = \pm 1 \end{cases}$$

$$\frac{n^c + \sqrt{n} - n - 5}{n^5 - 1} = n + 5 \rightarrow n + 5 = n + c \rightarrow c = 5$$

$$\frac{an + 5}{n + b} = n + 5 \xrightarrow{n=1} \frac{a+5}{b+1} = 5$$

$$\xrightarrow{n=-1} \frac{-a+5}{b-1} = 1 \rightarrow 5-a = b-1 \rightarrow b = 5-a$$

$$a+5 = a-5a+5 \rightarrow 5a = 10 \rightarrow a = 2 \xrightarrow{b=5-a} b = 3, \delta = 0/0$$

$$c+b = 5+0, \delta = 5, 0$$

$$b+c = 5, 0$$

$$f(n) = \sqrt{\varepsilon n - ca} + k - 1 \quad g(n) = \sqrt{b - \varepsilon n} \quad f-g = \{(1, k)\}$$

$$ca - \frac{b}{\varepsilon} - k = ?$$

$$f(1) = \sqrt{\varepsilon - ca} + k - 1$$

$$\alpha = \beta$$

$$g(1) = \sqrt{b - \varepsilon} = 0 \rightarrow b = \varepsilon$$

$$g(1) = \sqrt{b - \varepsilon}$$

$$f(1) = \sqrt{\varepsilon - ca} = 0 \rightarrow a = \frac{\varepsilon}{c}$$

$$c\left(\frac{\varepsilon}{c}\right) - \frac{\varepsilon}{\varepsilon} - k = ?$$

$$f(1) - g(1) = k - 5 - k = k \rightarrow k = -5 \rightarrow k = -1$$

$$\varepsilon - 5 + 1 = 0 \quad \checkmark$$

$$f(n) = \sqrt{m-n} + n \quad g(n) = \sqrt{n+5} \quad D_{f \times g} = [-1, \sqrt{5}] \quad f-g(n) = 5\sqrt{5}$$

$$m+n=? \quad n-m \geq 0 \rightarrow m \geq n \rightarrow m = \sqrt{5}$$

$$f(n) - g(n) = 5\sqrt{5} \rightarrow (\sqrt{5} + n) - \sqrt{5} = 5\sqrt{5} \rightarrow \sqrt{5} + n = 10\sqrt{5} \rightarrow n = 9\sqrt{5}$$

$$f(n) = \sqrt{5-n} + n = 5+n$$

$$m+n = 10\sqrt{5} - 5 + \sqrt{5} = 10\sqrt{5} - 5$$

$$g(n) = \sqrt{5} = 5\sqrt{5}$$

$$10\sqrt{5} - 5 + \sqrt{5} = 10\sqrt{5} - 5$$

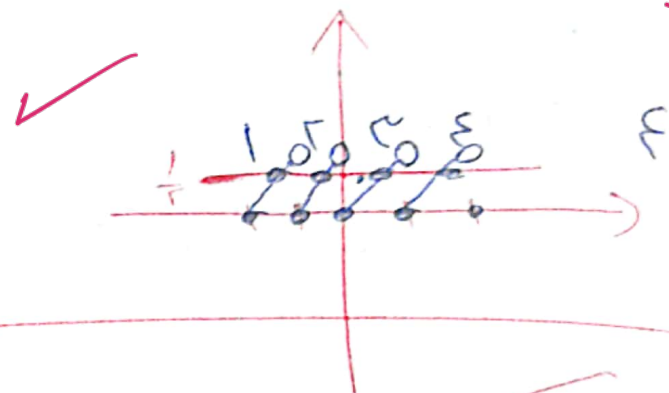
$$10\sqrt{5} - 5$$

$$y = \frac{1}{n} \sum_{i=1}^n (n - [n_i]) = \frac{1}{n} \rightarrow (n - [n_i]) = \frac{1}{n}$$

جواب 6 در بازه $[-0.5, 0.5]$

2

3



دوازدهم سپهر B

بردا جانفرو