

۱۴ صفحہ آخر ورقوں کی طرف

$$m = \begin{pmatrix} 3y - 1 & y \geq 1 \\ -y^2 & y < 1 \end{pmatrix} \Rightarrow \begin{cases} 3(2) - 1 = 5 \\ -(2)^2 = -4 \end{cases} \rightarrow 5 + (-4) = 1$$

پس تابع ~~نیست~~

چون دهنه هم در واقع به اثری
و دهانی به اثره اینست پس است
پس بدین مقدار تابع هم پس است
مثال نقض : ۲

یک تابع به دو تابع به
بنابر:

$x^2 - f_m = 0 \Rightarrow x(x^2 - f) = x(x - \sqrt{f})(x + \sqrt{f}) = 0 \Rightarrow D_f = \mathbb{R} - \{-\sqrt{f}, 0, \sqrt{f}\} \leftarrow D_f = \mathbb{R} - \left\{ \frac{0}{\pm \sqrt{f}} \right\} \text{ (الف)}$
 $f(x) = \sqrt{\frac{x^2 - f_m + f}{x^2 - f_m}} \Rightarrow \frac{x^2 - f_m + f}{x^2 - f_m} \geq 0 \Rightarrow x^2 - f_m + f \geq 0 \Delta \leftarrow \text{مربع}$

 $x^2 - f_m = 0 \rightarrow x(x^2 - f) \Rightarrow x = 0 \quad x = \sqrt{f} \quad x = -\sqrt{f}$
 $D_g = \mathbb{R} \setminus \{(-\sqrt{f}, 0) \cup (\sqrt{f}, +\infty)\} \checkmark$ سوال 3

$$g(n) = \sqrt{\frac{x(n-r)}{x(n)}} \quad \rightarrow \quad \left\{ \begin{array}{l} x(n) \neq 0 \Rightarrow n = -r, r, \omega \in \mathbb{Z}_{2M}^{\text{odd}} \\ \textcircled{x(n-r)} \\ x(n) \neq 0 \end{array} \right.$$

where $n = 0 \leftarrow \frac{x(n-r)}{x(n)}$

$x(n-r) \rightarrow \text{not } \Rightarrow n-r \neq 0 \Rightarrow n \neq r$

$\hookrightarrow x(n-r) = 0 \Rightarrow n = -r, \omega, v \Rightarrow \mathbb{Z}_{2M}^{\text{odd}}$

$n-r = -r, r, \omega \rightarrow$

$D_g = (-r, r] \cup [r, v) \cup [v, \omega)$

$D_g = (-r, r] \cup [r, v) \cup [v, \omega)$

سوال ٢

[illegible]

(ii) $f(m) = \frac{\sqrt{x(m^2-1)}}{\sqrt{|m|+n}}$ $\rightarrow \begin{cases} x(m^2-1) = m(m-1)(m+1) \geq 0 \\ |m|+n \geq 0 \end{cases} \rightarrow \begin{cases} m \in [-1, 1] \cup [1, +\infty) \\ |m|+n \geq 0 \end{cases} \rightarrow D_f = [-1, +\infty) \quad \text{①}$

-), $f(m) = \frac{\sqrt{|m|-m^2}}{|m|-1}$

$|m|-1 \neq 0 \Rightarrow |m| \neq 1 \Rightarrow m \neq \pm 1$

$|m|-m^2 \geq 0 \Rightarrow |m| \leq m^2 \Rightarrow \begin{cases} m \geq 1 \Rightarrow m^2 - m \geq 0 \Rightarrow m(m-1) \geq 0 \Rightarrow m \geq 1 \\ m \leq -1 \Rightarrow m^2 - m \geq 0 \Rightarrow m(m-1) \geq 0 \Rightarrow m \leq -1 \end{cases}$

$|m|-1 \neq 0 \Rightarrow |m| \neq 1 \Rightarrow m \neq \pm 1$

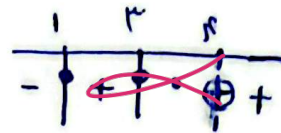
$D_f = [-1, 1) \cup (1, +\infty)$

① $\cap$ ②

الف. $\sqrt{(n-2)(n-2)} \Rightarrow (n-2)[n-2] \geq 0 \Rightarrow (n-2), [n-2] \Rightarrow$ همواره علامت $\Rightarrow D_f = \mathbb{R}$ هستند

(1)

$\rightarrow J = \sqrt{|n-1|} [n-2] \Rightarrow |n-1| [n-2] \geq 0$
 $\downarrow$
 مثبت ، منفی ، ~~صفر~~



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$D_f = [1, +\infty)$

$f(n) = \frac{n^2 + 2n + 2}{n^2 + 2n + 2} \cdot \frac{(n+2)(n+1)(n-1)}{(n+2)(n+1)(n-1)} \Rightarrow D_f = \mathbb{R} - \{-2, -1\} \Rightarrow$ ~~نه~~
 بنایه فرمت کسر رو تغییر
 بده چون ریشه های منفرجه رو از بین میبری

5

$n^2 - 2(n) + 2 = 0 \Rightarrow n^2 - 2n + 2 = 0 \Rightarrow \Delta = b^2 - 4ac = (-2)^2 - 4(1)(2) = -4$

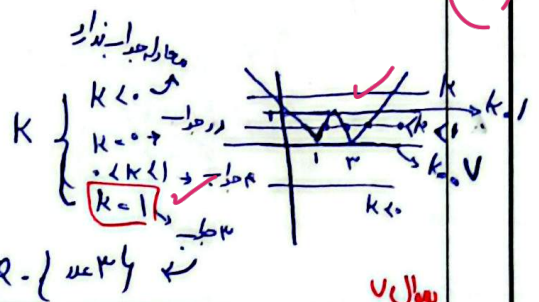
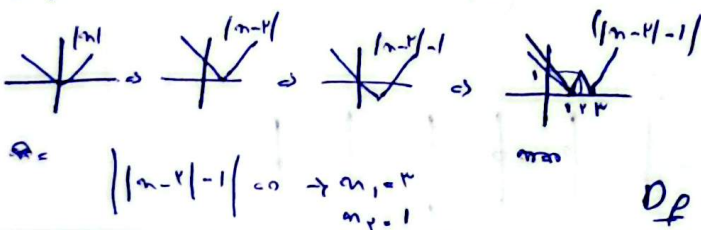
رسم ندارد $\Delta < 0 \Rightarrow$ سوال 8

1

$||n-2|-1| + k \geq 0 \Rightarrow k = 1 \checkmark$

(2)

همه مقادیر



$D_f = \mathbb{R} - \{2, 3\}$

سوال 7

$y = \log_{n+1} \frac{1}{n} \Rightarrow \left. \begin{array}{l} n > 1 \\ n \neq 1 \\ n+1 > 0 \Rightarrow n > -1 \\ n+1 \neq 0 \Rightarrow n \neq -1 \end{array} \right\} \Rightarrow D_f = (-\infty, -1) \cup (1, +\infty)$

(1, 5)

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$\log_{n+1} \frac{1}{n} > 0 \Rightarrow \frac{1}{n} > 1 \Rightarrow \frac{1}{n} > 1 \Rightarrow n < 1$

$f(n) \rightarrow D_f = [-5, 5] \Rightarrow -5 \leq n \leq 5 \xrightarrow{n^2-1} -5 \leq n^2-1 \leq 5 \Rightarrow -4 \leq n^2 \leq 6 \Rightarrow -\sqrt{6} \leq n \leq \sqrt{6}$

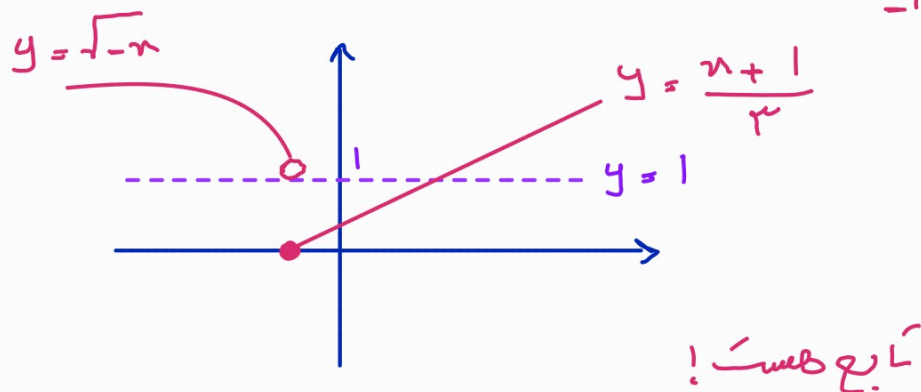
$-\frac{\sqrt{6}}{3} \leq n \leq \frac{\sqrt{6}}{3} \Leftrightarrow -\sqrt{\frac{6}{9}} \leq n \leq \sqrt{\frac{6}{9}} \Leftrightarrow n^2 \leq \frac{6}{9} \Leftrightarrow n^2 \leq \frac{2}{3}$

(2)

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$\frac{-\sqrt{3}}{3} \leq n \leq \frac{\sqrt{3}}{3} \Rightarrow D_f = \left[-\frac{\sqrt{3}}{3}, \frac{\sqrt{3}}{3} \right]$

$$y = \begin{cases} \frac{n+1}{n} & y \geq 0 \\ \sqrt{-n} & y > 1 \end{cases}$$



$$f(-2) \neq 0 \rightarrow [-n] \neq 2 \rightarrow D_f = \mathbb{R} - (-2, -1]$$

ب. 4

$$|n-1| [n-3] \geq 0 \rightarrow [n-3] \geq 0 \rightarrow [n] \geq 3 \rightarrow n \geq 3$$

$$D_f = [3, +\infty) \cup \{1\}$$

8- ب. ریشه تمام مخرج ها را در مخرج!

$$f(n) = \frac{(n+2)(n+1)}{\frac{n+1}{n-1}} \Rightarrow n \neq \{-2, -1, 1\} \rightarrow n \neq 3$$

$$n^2 - 4n + 4 = 0 \rightarrow n^2 - 4n + 4 = 0 \rightarrow n = 2$$

$$1) n+1 > 0 \rightarrow n > -1, n+1 \neq 1 \rightarrow n \neq 0$$

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$$2) n > 0, n \neq 1$$

$$\Rightarrow D_f = (0, 1)$$

$$3) \lg \frac{1}{n} > 0 \rightarrow 0 < n < 1$$