

آرمینا کبیری
گروه دهم ریاضیات

الف) $n-1$ بخش پذیر است $\rightarrow$ جمع ضرایب درج معادلات

$$\begin{aligned} 5n^2 - 14n + 5 &= 0 \rightarrow (n-1)(n-5) = 0 \\ \text{نصف می} &\rightarrow \begin{cases} n = \frac{1}{5} \\ n = 5 \end{cases} \end{aligned}$$

$$\begin{aligned} \frac{5n^2 - 14n + 5}{-(5n^2 - 5n)} &= \frac{n-1}{5n-14n+5} \\ \frac{-14n^2 + 41n - 15}{-(-14n^2 + 14n)} &= \frac{15n-15}{-(15n-15)} \\ &= 0 \end{aligned}$$

بسیجی معادله $\rightarrow \frac{1}{5}, 5$

$$D_f = R - \left\{ \frac{1}{5}, 5 \right\}$$

ب) درج ضرایب توان های زوج برابر ضرایب توان های فرد است

$$\begin{aligned} 3n^2 - 4n - 5 &= 0 \rightarrow n^2 - 4n - 5 = 0 \\ \text{نصف می} &\rightarrow (n-5)(n+1) = 0 \\ &\rightarrow \begin{cases} n = \frac{5}{3} \\ n = -\frac{1}{3} \end{cases} \end{aligned}$$

$$\begin{aligned} \frac{-4n^2 - 11n - 5}{-(-4n^2 - 4n)} &= \frac{-4n - 5}{-(-4n - 1)} \\ &= 0 \end{aligned}$$

بسیجی معادله $\rightarrow -1, -\frac{5}{3}, \frac{5}{3}$

$$D_f = R - \left\{ -1, -\frac{5}{3}, \frac{5}{3} \right\}$$

الف) $\frac{n+1}{n-\sqrt{2}-2n} \rightarrow 3-2n \neq 0 \rightarrow n \neq \frac{3}{2}$

$$n - \sqrt{2} - 2n \neq 0 \rightarrow n^2 + 2n - 3 \neq 0 \rightarrow (n+3)(n-1) \neq 0 \rightarrow n \neq -3, n \neq 1$$

$$D_f = (-\infty, \frac{3}{2}] - \{1\}$$

گروه $n=3$ ایند فرم منفی شود پس جواب ندارد

ب) $\frac{n+2}{n-\sqrt{2}-2n} \rightarrow 3n-2 \neq 0 \rightarrow n \neq \frac{2}{3}$

$$n - \sqrt{2} - 2n \neq 0 \rightarrow n^2 - 3n + 2 \neq 0 \rightarrow (n-1)(n-2) \neq 0 \rightarrow n \neq 1, n \neq 2$$

$$D_f = \left[\frac{2}{3}, +\infty \right) - \{1, 2\}$$

الف) $1 \cos n - 1 \neq 0 \rightarrow \cos n \neq \frac{1}{4}$



$$D_f = R - \left\{ \frac{\pi}{4}, 2\pi - \frac{\pi}{4} \right\}$$

ب) $1 \sin n + 1 \neq 0 \rightarrow \sin n \neq -\frac{1}{4}$



$$D_f = R - \left\{ \frac{7\pi}{4}, \frac{5\pi}{4} \right\}$$

ج) $Cot n = \frac{\cos n}{\sin n} \rightarrow \sin n \neq 0$



$$\tan n = \frac{\sin n}{\cos n} \rightarrow \cos n \neq 0$$



$$Cot n - 1 \neq 0 \rightarrow Cot n \neq 1$$



$$D_f = R - \left\{ \frac{\pi}{4}, \frac{5\pi}{4} \right\}$$

ج) $\sin^2 x - 3 \neq 0 \rightarrow \sin^2 x \neq \frac{3}{4} \rightarrow \sin x \neq \pm \frac{\sqrt{3}}{2}$
 $D_f = \mathbb{R} - \left\{ x \mid x = \frac{\pi}{6}, \frac{5\pi}{6}, \frac{7\pi}{6}, \frac{11\pi}{6} \right\}$



الف) $x^2 - 5x + 4 > 0 \rightarrow (x-4)(x-1) > 0$



$D_f = (-\infty, 1) \cup (4, +\infty)$

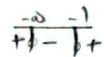
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ب) $x^2 - 4x + 4 \leq 0 \rightarrow (x-2)^2 \leq 0$



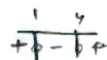
$D_f = \{2\}$

ج) $x^2 + 4x + 4 \geq 0 \rightarrow (x+2)^2 \geq 0$



$D_f = (-\infty, -2] \cup [-2, +\infty)$

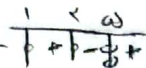
د) $x^2 - 4x + 4 \leq 0 \rightarrow (x-2)^2 \leq 0$



$D_f = \{2\}$

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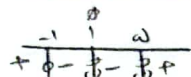
الف) $\frac{(x-1)(x-2)}{x-5} < 0$



$D_f = (-\infty, 1) \cup (2, 5)$

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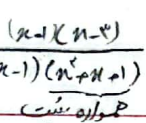
ب) $\frac{(x-1)(x+1)}{(x-1)(x-5)} \geq 0$



$D_f = (-\infty, -1] \cup (5, +\infty)$

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الف) $\frac{x^2 - 5x + 4}{x^2 - 1} \geq 0$



$D_f = [-1, 4] \cup (4, +\infty)$

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ب) $x^2 - 1 \neq 0 \rightarrow (x-1)(x+1) \neq 0 \rightarrow x \neq 1, x \neq -1$
 $D_f = \mathbb{R} - \{1, -1\}$

الف) $x^2 - 3x > 0 \rightarrow x(x-3) > 0$



$D_f = (-\infty, 0) \cup (3, +\infty)$

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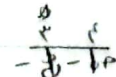
ب) $|x-2| > 0 \rightarrow x \neq 2$

$|x-2| < 2 \rightarrow -2 < x-2 < 2 \rightarrow 0 < x < 4$

$D_f = (0, 4) - \{2\}$

$|x-2| \neq 1 \rightarrow x \neq 1, x \neq 3$

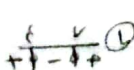
ج) $\frac{x^2 - 4x + 4}{x-2} \geq 0 \rightarrow \frac{(x-2)^2}{x-2} \geq 0$



$D_f = [2, +\infty)$

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د) $x^2 - 11x + 10 \geq 0 \rightarrow (x-10)(x-1) \geq 0$



$D_f = (-\infty, 1] \cup [10, +\infty)$

$D_f = (0, 1] - \{1\}$

subject

Year Month Date ()

ریشه ها:

	-1	0	1
$x^2 - n$	+	+	+
$x^2 + n$	+	-	+
y	+	-	+

(n)

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ریشه ها $y = \frac{x^2 - n}{x^2 + n} = \frac{x(n-1)}{x(n+1)}$

-1	0	1
+	-	+

$\frac{x - f(n)}{f(n)} > 0$

ریشه ها $f(n) = 0 \rightarrow n = 2, n = -2$

ریشه ها $n f(n) = 0 \rightarrow n = f(n) \rightarrow n = 2, n = -1$

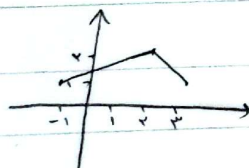
-2	-1	2	3
-	+	-	+

$D_f = [-2, -1] \cup [2, 3]$

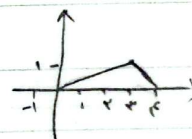
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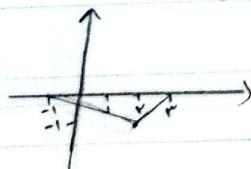
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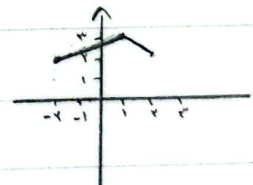
(ب)



(ج)



(د)



(10)

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