

19, 175 عا

نام و نام خانوادگی سید عالم پاسخنامه تشریحی تکلیف شماره ۶ کلاس تصمیم

الف) $2x^2 - 10x + 12 \neq 0 \Rightarrow (x-1)(2x^2 - 14x + 12) \neq 0 \Rightarrow$

$(x-1)(2x-0)(2x-3) \neq 0 \Rightarrow D_f = \mathbb{R} - \{1, 1.5, 2.5\}$

ب) $2x^2 - x^2 - 11x - 2 \neq 0 \Rightarrow (x+1)(2x^2 - 2x - 2) \neq 0$

$(x+1)(2x+2)(x-2) \neq 0 \Rightarrow D_f = \mathbb{R} - \{-1, -\frac{1}{2}, 2\}$

الف) $x - \sqrt{3-2x} \neq 0 \Rightarrow x^2 \neq 3-2x \Rightarrow x+2x-2 \neq 0 \Rightarrow (x-1)(x+3) \neq 0$

$3-2x \geq 0 \Rightarrow 2 \geq 2x \Rightarrow x \leq 1.5$ $D_f = (-\infty, 1.5] - \{1\}$

ب) $x - \sqrt{3x-2} \neq 0 \Rightarrow x^2 \neq 3x-2 \Rightarrow x^2 - 3x + 2 \neq 0 \Rightarrow (x-2)(x-1) \neq 0$

$3x-2 \geq 0 \Rightarrow 3x \geq 2 \Rightarrow x \geq \frac{2}{3}$ $D_f = (1.5, \infty) - \{2\}$

الف) $2\cos x - 1 \neq 0 \Rightarrow \cos x \neq \frac{1}{2} \Rightarrow \mathbb{R} - \{2k\pi \pm \frac{\pi}{3} \mid k \in \mathbb{Z}\}$

ب) $2\sin x + 1 \neq 0 \Rightarrow \sin x \neq -\frac{1}{2} \Rightarrow \mathbb{R} - \{2k\pi - \frac{\pi}{6}, 2k\pi - \frac{5\pi}{6} \mid k \in \mathbb{Z}\}$

ج) $\tan x \in \mathbb{R} \Rightarrow D_f = \mathbb{R} - \{\frac{k\pi}{2}, k\pi + \frac{\pi}{2} \mid k \in \mathbb{Z}\}$

د) $4\sin^2 x - 3 \neq 0 \Rightarrow \sin^2 x \neq \frac{3}{4} \Rightarrow \sin x \neq \pm \frac{\sqrt{3}}{2} \Rightarrow \mathbb{R} - \{k\pi \pm \frac{\pi}{3}, k\pi \pm \frac{2\pi}{3} \mid k \in \mathbb{Z}\}$

الف) $(x-3)(x-2) > 0$ $D_f = \mathbb{R} - [2, 3]$

ب) $(x-0)(x-1) < 0$ $D_f = (1, \infty)$

ج) $(x+1)(x+5) \geq 0$ $D_f = (-\infty, -5] \cup [-1, \infty)$

د) $(x-1)(x-4) \leq 0$ $D_f = [1, 4]$

الف) $\frac{(x-1)(x-2)}{x-0} < 0$ $D_f = (-\infty, 1) \cup (2, 0)$

ب) $\frac{(x-1)(x+1)}{(x-1)(x-0)} \geq 0$ $D_f = (-\infty, -1] \cup (0, \infty)$

$$\frac{(x-2)(x-1)}{(x-1)(x^2+x+1)} \geq 0 \quad \frac{1^+ \quad 1^-}{-\frac{1}{2} - \frac{1}{2} +} \quad D_f = [2, +\infty)$$

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$$x^2-1 \neq 0 \quad (x-1)(x+1) \neq 0 \\ x \neq \pm 1$$

$$D_f = \mathbb{R} - \{-1, 1\}$$

$$\text{الف) } x^2-2x > 0 \quad x(x-2) > 0 \quad \frac{0^+ \quad 2^-}{+\frac{1}{2} - \frac{1}{2} +} \quad D_f = \mathbb{R} - [0, 2]$$

$$\text{ب) } 14-x^2 > 0 \Rightarrow (x-4)(x+4) > 0 \\ |x|-2 > 0 \Rightarrow |x| > 2 \\ |x|-2 \neq 1 \Rightarrow x \neq \pm 3$$

$$\frac{-2^+ \quad 2^-}{-\frac{1}{2} + \frac{1}{2} -}$$

$$D_f = (-2, -2) \cup (2, 2) - \{3, -3\}$$

$$y = \frac{x(x-1)}{x(x+1)}$$

	-1	0	1
$x(x-1)$	+	+	-
$x(x+1)$	+	-	+
$p(x)$	+	-	+

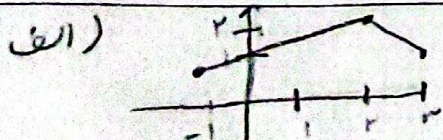
	-1	0*	1
$x(x-1)$	+	-	-
$x(x+1)$	+	-	+
$p(x)$	+	-	+

$$f(x) \neq 0 \Rightarrow x \neq \pm 2$$

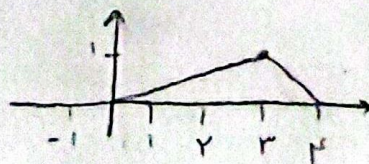
$$\frac{x-f(x)}{f(x)} \geq 0$$

$$\frac{-2^+ \quad -1^- \quad 2^+ \quad 3^-}{-\frac{1}{2} + \frac{1}{2} - \frac{1}{2} + \frac{1}{2} -}$$

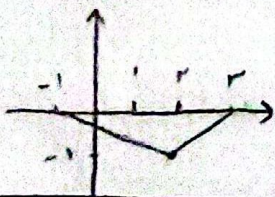
$$D_f = (-2, -1] \cup (2, 2]$$



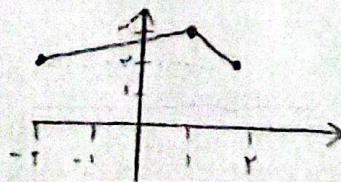
ب)



ج)



د)



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سوال ۷ قسمت ج و د :

ج.)

$$\frac{n^2 - 7n + 12}{n - 3} \Rightarrow \frac{(n-3)(n-4)}{n-3} > 0 \quad \begin{array}{cc} 3 & 4 \\ - & - \\ \hline - & + \end{array}$$

$$10 - n > 0 \Rightarrow n < 10$$

$$10 - n \neq 1 \Rightarrow n \neq 9$$

$$D_f = (4, 10) - \{9\}$$

$$>) \quad n^2 - 11n + 28 > 0 \quad (n-7)(n-4) > 0 \quad \begin{array}{cc} 4 & 7 \\ + & - \\ \hline + & - \end{array}$$

$$\sqrt{36 - n^2} > 0 \Rightarrow 36 - n^2 > 0$$

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

$$\begin{array}{cc} -6 & 6 \\ - & + \\ \hline - & - \end{array}$$

$$D_f = (0, 6] - \{1\}$$