

$$\frac{(x-3)(x-1)}{(x-1)(x^2+x+1)} \geq 0 \quad \frac{1^* \cdot 3}{-1 \text{ من } - \phi +} \rightarrow D_{(f)} = [3, +\infty) \quad \text{(الف)}$$

بدلیل اینکه $\sqrt[3]{\quad}$ محدوده دیتی
ایجاد نمی کند.

$$x^3 - 1 \neq 0 \rightarrow x \neq \pm 1 \rightarrow D_{(f)} = \mathbb{R} - \{\pm 1\} \quad \text{(ب)}$$

$$x^2 - 3x > 0 \rightarrow x(x-3) > 0 \quad \frac{0 \quad 3}{+ \phi - \phi +} \rightarrow D_{(f)} = \mathbb{R} - \{0, 3\} \quad \text{(الف)}$$

$$14 - x^2 > 0 \rightarrow -4 < x < 4 \quad (1) \quad |x| - 2 > 0 \rightarrow x > 2, x < -2, x \neq \pm 3 \rightarrow D_{(f)} = (-4, -2) \cup (2, 4) \quad \text{(ب)}$$

$$(x-7)(x-4) \geq 0 \quad \frac{4 \quad 7}{+ \phi - \phi +} \rightarrow x \neq (4, 7) \quad (1) \quad \text{(ج) پایین نوشته شده}$$

$$34 - x^2 > 0 \rightarrow -6 < x < 6 \quad (2)$$

$$x > 0 \text{ و } x \neq 1 \quad (4)$$

$$(1) \cap (2) \cap (3) \cap (4) \rightarrow D_{(f)} = (0, 4] - \{1\} \quad \text{(د)}$$

بقی ج سوال ۷:

$$y = \frac{x(x-1)}{x(x+1)} \quad \frac{-1 \quad 0 \quad 1}{+ \text{ من } - \text{ من } - \phi +} \quad \text{سریع:}$$

$$\frac{(x-4)(x-3)}{x-3} > 0 \quad \frac{3^* \quad 4}{-1 \text{ من } - \phi +} \quad x > 4$$

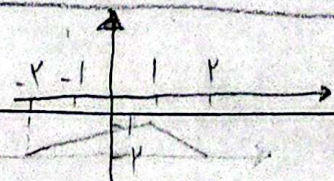
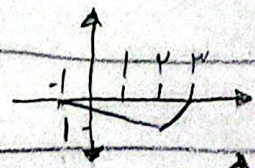
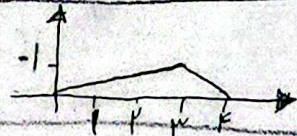
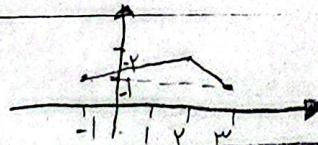
$$10 - x > 0 \rightarrow x < 10 \text{ و } x \neq 9$$

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

	-1	0	1
$x^2 - x$	+	+	-
$x^2 + x$	+	-	+
$P(x)$	+	-	+

	-2	-1	0	2	3
$x - f(x)$	-	-	+	+	+
$f(x)$	+	+	-	-	+
$P(x)$	-	-	+	-	-

$$D_{(f)} = (-2, -1] \cup (2, 3]$$



الف) $(x-1)(2x-3)(2x-5) \neq 0 \rightarrow$ مخرج $\neq 0$
 $D_{(f)} = \mathbb{R} - \left\{1, \frac{3}{2}, \frac{5}{2}\right\}$

ب) $3x^2 - x^2 - 1x - 4 \neq 0 \rightarrow (x+1)(2x^2 - 2x - 4) \neq 0$
 $(x-2)(x+2) \rightarrow$ ریشه $= 2, -\frac{2}{3}$
 $D_{(f)} = \mathbb{R} - \left\{-1, 2, -\frac{2}{3}\right\}$

الف) $\sqrt{3-2x} \rightarrow 3-2x \geq 0 \rightarrow x \leq \frac{3}{2}$
 $x - \sqrt{3-2x} \neq 0 \Rightarrow x^2 + 2x - 3 \neq 0 \rightarrow (x+3)(x-1) \neq 0$
 $D_{(f)} = (-\infty, \frac{3}{2}] - \{1, -3\}$

ب) $3x - 2 \geq 0 \rightarrow x \geq \frac{2}{3}$
 $x - \sqrt{3x-2} \neq 0 \rightarrow x^2 - 3x + 2 \neq 0 \rightarrow (x-1)(x-2) \neq 0$
 $D_{(f)} = [\frac{2}{3}, +\infty) - \{1, 2\}$

الف) $2\cos x - 1 \neq 0 \rightarrow \cos x \neq \frac{1}{2} \rightarrow D_{(f)} = \mathbb{R} - \left\{2k\pi - \frac{\pi}{3}, 2k\pi + \frac{\pi}{3}\right\}$

ب) $2\sin x + 1 \neq 0 \rightarrow \sin x \neq -\frac{1}{2} \rightarrow D_{(f)} = \mathbb{R} - \left\{2k\pi + \frac{7\pi}{6}, 2k\pi + \frac{11\pi}{6}\right\}$

ج) $\tan, \cot = \frac{k\pi}{\pi}, \cot x \neq 1$
 تعریف نشده ① ② $\rightarrow D_{(f)} = \mathbb{R} - \left\{\frac{k\pi}{2}, k\pi + \frac{\pi}{4}\right\}$

د) $4\sin^2 x - 3 \neq 0 \rightarrow \sin x \neq \pm \frac{\sqrt{3}}{2} \rightarrow D_{(f)} = \mathbb{R} - \left\{k\pi + \frac{\pi}{3}, k\pi + \frac{2\pi}{3}\right\}$

الف) $(x-3)(x-2) > 0 \rightarrow \frac{3}{+} \frac{2}{-} \rightarrow \mathbb{R} - [2, 3]$

ب) $(x-5)(x-1) < 0 \rightarrow \frac{1}{+} \frac{5}{-} \rightarrow (1, 5)$

ج) $(x+1)(x+5) \geq 0 \rightarrow \frac{-5}{+} \frac{-1}{-} \rightarrow \mathbb{R} - (-5, -1)$

د) $(x-2)(x-1) \leq 0 \rightarrow \frac{1}{+} \frac{2}{-} \rightarrow [1, 2]$

الف) $\frac{(x-2)(x-1)}{x-5} < 0 \rightarrow \frac{1}{-} \frac{2}{+} \frac{5}{-} \rightarrow (-\infty, 1) \cup (2, 5)$

ب) $\frac{(x+1)(x-1)}{(x-5)(x-1)} \geq 0 \rightarrow \frac{-1}{+} \frac{1}{-} \frac{5}{-} \rightarrow (-\infty, -1] \cup (5, +\infty)$
 $\mathbb{R} - (-1, 5]$