نام و نام خانوادگی ..... پاسخنامه تشریحی تکلیف شماره ۶ ..... کلاس .....

۱

الف) $\frac{x+4}{(x-1)(x-\frac{4}{5})(x-\frac{10}{5})}$ $D_f = R - \{1, \frac{4}{5}, \frac{10}{5}\}$

ب) $\frac{x+3}{(x+1)(x-2)(x+\frac{2}{3})}$ $D_f = R - \{-1, 2, -\frac{2}{3}\}$

۲

الف) $3-2x \geq 0 \rightarrow x \leq \frac{3}{2}$ ، $x \neq \sqrt{3-2x} \rightarrow x \neq \sqrt{3-2x}$

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

ب) $3x-2 \geq 0 \rightarrow x \geq \frac{2}{3}$ ، $x \neq \sqrt{3x-2} \rightarrow x \neq \sqrt{3x-2}$

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

۳

الف) $2\cos x - 1 \neq 0 \rightarrow \cos x \neq \frac{1}{2} \rightarrow D_f = R - \{2k\pi + \frac{\pi}{3}, 2k\pi - \frac{\pi}{3}\}$

ب) $2\sin x + 1 \neq 0 \rightarrow \sin x \neq -\frac{1}{2} \rightarrow D_f = R - \{2k\pi - \frac{\pi}{6}, 2k\pi - \frac{5\pi}{6}\}$

ج) $\cot, \tan x \rightarrow$ ضابطه‌ی $0, \pi, 2\pi$ $\cot x - 1 \neq 0 \rightarrow \cot x \neq 1 \rightarrow x \neq \pi, \frac{5\pi}{4}$

$D_f = R - \{\frac{\pi}{4}, k\pi + \frac{\pi}{2}\}$

د) $2\sin^2 x - 3 \neq 0 \rightarrow \sin^2 x \neq \frac{3}{4} \rightarrow \sin x \neq \frac{\sqrt{3}}{2} \rightarrow D_f = R - \{2k\pi + \frac{\pi}{3}, 2k\pi + \frac{2\pi}{3}\}$

۴

الف) $(x-3)(x-2) > 0$ $D_f = (-\infty, 2) \cup (3, +\infty)$

ب) $(x-1)(x-5) < 0$ $D_f = (1, 5)$

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

د) $(x-4)(x-1) \leq 0$ $D_f = [1, 4]$

۵

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

ب) $\frac{(x-1)(x+1)}{(x-1)(x-5)} \neq 0 \rightarrow$ $D_f = (-\infty, -1] \cup (5, +\infty)$

۶

الف) $\frac{(x-1)(x-3)}{(x-1)(x^2+x+1)} \geq 0 \rightarrow$ (ریشه ندارد) $\rightarrow$ $D_f = [3, +\infty)$

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

۷

الف) $x^2 - 2x > 0 \rightarrow x(x-2) > 0 \rightarrow (-\infty, 0) \cup (2, +\infty)$

ب) $16 > x^2 \rightarrow 4 > |x|$

$|x| - 2 > 0 \rightarrow |x| > 2$

$D_f = (-4, -2) \cup (-2, 2) \cup (2, 4)$

ج) $\frac{x^2 - 2x + 2}{x-2} > 0 \rightarrow x - 2 \neq 0 \rightarrow x \neq 2$

$D_f = (2, 6) \cup (6, +\infty)$

د) $(x-5)(x-7) \geq 0$

$D_f = [5, 6] - \{7\}$

$[-6, 4]$

$15 - x > 0 \rightarrow x < 15$

$1 \neq x - 10$

$x \neq 11$

$11 \neq x < 15$

۸

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

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

۹

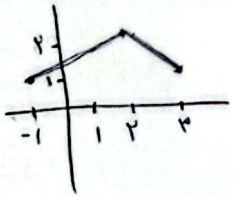
	-2	-1	2	
x	-	-	+	+
$f(x)$	+	-	-	+
$xf(x)$	-	+	-	+

CC CC

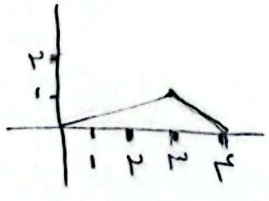
$(-\infty, -2] \cup [2, +\infty)$

۱۰

$f(x) + 1$



$f(x-1)$



$-f(x)$

$f(x+1) + 2$