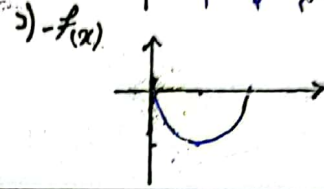
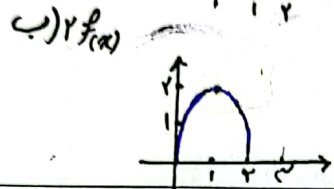
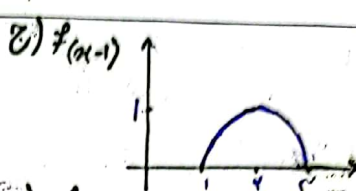
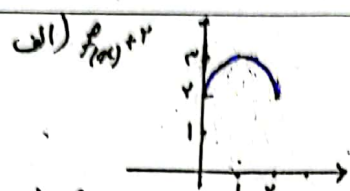
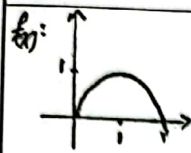


پاسخنامه تشریحی تکلیف شماره ... کلاس ...



الف) $x^2 - 5x + 6 > 0 \Rightarrow (x-2)(x-3) > 0$
 جواب: $(-\infty, 2) \cup (3, +\infty)$
 ب) $x^2 - 5x + 6 < 0 \Rightarrow (x-2)(x-3) < 0$
 جواب: $(2, 3)$
 ج) $x^2 + 5x + 6 > 0 \Rightarrow (x+1)(x+6) > 0$
 جواب: $(-\infty, -6] \cup [-1, +\infty)$
 د) $x^2 - 7x + 6 \leq 0 \Rightarrow (x-1)(x-6) \leq 0$
 جواب: $[1, 6]$

x	$-\infty$	-1	-6	$+\infty$
$f(x)$	+	0	-	+

x	$-\infty$	1	6	$+\infty$
$f(x)$	+	0	-	+

x	$-\infty$	-6	-1	$+\infty$
$f(x)$	+	0	-	+

x	$-\infty$	1	6	$+\infty$
$f(x)$	+	0	-	+

الف) $\frac{x^2 - 3x + 2}{x - 5} < 0 \Rightarrow \frac{(x-1)(x-2)}{x-5} < 0$
 جواب: $(-\infty, 1) \cup (2, 5) \cup (5, +\infty)$
 ب) $\frac{x^2 - 1}{x^2 - 5x + 6} \geq 0 \Rightarrow \frac{(x-1)(x+1)}{(x-2)(x-3)} \geq 0$
 جواب: $(-\infty, -1] \cup [1, 2) \cup (3, +\infty)$

x	$-\infty$	1	2	5	$+\infty$
$f(x)$	-	0	+	0	+

x	$-\infty$	-1	1	2	3	$+\infty$
$f(x)$	+	0	-	0	+	+

الف) $y = \sqrt{\frac{x^2 - 1}{x^2 - x}} = \sqrt{\frac{(x-1)(x+1)}{x(x-1)}} = \sqrt{\frac{x+1}{x}}$
 $D_f = [1, +\infty) \cup \{0\}$
 ب) $y = \sqrt{\frac{x^2 - 1}{x^2 - 5x + 6}} = \sqrt{\frac{(x-1)(x+1)}{(x-2)(x-3)}}$
 $D_f = (-\infty, -1] \cup (1, 2) \cup (3, +\infty)$

x	$-\infty$	-1	1	2	3	$+\infty$
$f(x)$	+	0	+	0	+	+

x	$-\infty$	-1	1	2	3	$+\infty$
$f(x)$	+	0	-	0	+	+

الف) $y = \sqrt{4 - \sqrt{x-1}}$
 $4 - \sqrt{x-1} \geq 0 \Rightarrow \sqrt{x-1} \leq 4 \Rightarrow 1 - x \leq 16 \Rightarrow x \geq -15$
 $D_f = [-15, 17]$
 ب) $y = \sqrt{3 - \sqrt{x-1}}$
 $3 - \sqrt{x-1} \geq 0 \Rightarrow \sqrt{x-1} \leq 3 \Rightarrow x - 1 \leq 9 \Rightarrow x \leq 10$
 $D_f = [1, 10]$

الف) $y = \sqrt{1-x^2} \Rightarrow x \leq 1 \Rightarrow x \leq 1 \Rightarrow x \leq 1$ $x \geq -1$ $D_f = [-1, 1]$ ب) $y = \sqrt{ x -1} \Rightarrow x \geq 1 \Rightarrow x \geq 1 \Rightarrow x \geq 1$ $x \leq -1$ $D_f = (-\infty, -1] \cup [1, +\infty)$		6
الف) $y = \sqrt{\frac{ x +1}{ x -1}} \Rightarrow x \neq 1 \Rightarrow x \neq \{1, -1\}$ $D_f = \mathbb{R} - \{1, -1\}$ ب) $y = \sqrt{\frac{\sqrt{x+1}}{\sqrt{x-1}}}$ $\sqrt{x} \neq 0 \Rightarrow x \neq 0$ $D_f = [0, +\infty) - \{1\}$		7
الف) $y = \frac{\sin x}{\cos x - 1} \Rightarrow \cos x \neq 1 \Rightarrow x \neq \{2k\pi \pm \frac{\pi}{2}\}$ $D_f = \mathbb{R} - \{2k\pi \pm \frac{\pi}{2}\}$ ج) $y = \frac{\tan x + 1}{\cot x - 1}$ $D_f = \mathbb{R} - \{\frac{k\pi}{2}, k\pi + \frac{\pi}{2}\}$	ب) $y = \frac{\cos x + 1}{\sin x + 1} \Rightarrow \sin x \neq -1$ $D_f = \mathbb{R} - \{2k\pi + \frac{3\pi}{2}, 2k\pi + \frac{5\pi}{2}\}$ د) $y = \frac{\sin x + 1}{\sin x - 1}$ $D_f = \mathbb{R} - \{k\pi \pm \frac{\pi}{2}\}$	8
$y = \frac{1}{\sqrt{ x-1 -\frac{1}{2}}} \Rightarrow x-1 > \frac{1}{2} \Rightarrow x-1 > \frac{1}{2} \Rightarrow x > \frac{3}{2}$ $x < \frac{1}{2}$ $D_f = \mathbb{R} - [\frac{1}{2}, \frac{3}{2}]$		9
الف) $y = \sqrt{1- x } \Rightarrow x \leq 1 \Rightarrow x \leq 1 \Rightarrow x \leq 1$ $x \geq -1$ $D_f = [-1, 1]$ ب) $y = \sqrt{\frac{ x }{ x +1}}$ $D_f = \mathbb{R} - \{0\}$		10