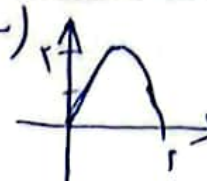
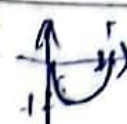


الف) 	ب) 	ج) 	د) 	۱
الف) $(x-1)(x-2) > 0$	$\frac{x}{+} \frac{x}{-}$	$x \leq -1$ یا $x \geq 2$	$(-\infty, -1) \cup (2, +\infty)$	۲
ب) $(x-1)(x-2) < 0$	$\frac{x}{+} \frac{x}{-}$	$-1 < x < 2$	$(-1, 2)$	
ج) $(x+1)(x+2) > 0$	$\frac{x}{+} \frac{x}{-}$	$x > -1$ یا $x \leq -2$	$(-\infty, -2] \cup (-1, +\infty)$	
د) $(x+1)(x+2) < 0$	$\frac{x}{+} \frac{x}{-}$	$-2 < x < -1$	$(-2, -1)$	
الف) $\frac{(x-1)(x-2)}{x-0} < 0$	$\frac{x}{+} \frac{x}{-}$	$-1 < x < 0$ یا $x > 2$	$(-1, 0) \cup (2, +\infty)$	۳
ب) $\frac{(x+1)(x+2)}{(x-1)(x-2)} > 0$	$\frac{x}{+} \frac{x}{-}$	$x > 0$ یا $x \leq -1$	$(0, +\infty) \cup (-\infty, -1]$	
الف) $y = \sqrt{\frac{(x-1)(x+2)}{(x-1)(x+2)}}$	$\frac{x}{+} \frac{x}{-}$	$D_f = (-\infty, -1) \cup (0, +\infty)$	۴	
ب) $y = \sqrt{\frac{(x-1)(x+2)}{(x-1)(x+2)}}$	$\frac{x}{+} \frac{x}{-}$	$D_f = (-\infty, -1] \cup (2, +\infty)$		
الف) $x > 0 \rightarrow x \leq 2$	$\sqrt{x} > 0 \rightarrow 1 > 2-x \rightarrow x \leq 1$	$x > 0$ یا $x \leq 1$	$D_f = [0, 1]$	۵
ب) $x < 0 \rightarrow x > 2$	$\sqrt{x} > 0 \rightarrow 1 > 2-x \rightarrow x \leq 1$	$x < 0$ یا $x \leq 1$	$D_f = [0, 1]$	

$\alpha) x \geq 1 \Rightarrow x^2 \geq 1 \Rightarrow \sqrt{x^2} \geq 1 \Rightarrow D_f = [-1, 1]$ $\beta) x = 9 \Rightarrow x \geq 1 \Rightarrow \sqrt{x^2} \geq 1 \Rightarrow D_f = \{9\}$	6
$\alpha) x = 5 \Rightarrow x \neq 5 \Rightarrow D_f = \mathbb{R} - \{5\}$ $\beta) x \geq 0, \sqrt{x} = 2 \Rightarrow x \neq 4 \Rightarrow D_f = [0, +\infty) - \{4\}$	7
$\alpha) \cos x \neq 0 \Rightarrow \cos x \neq \frac{1}{2} \Rightarrow x \neq k\pi \pm \frac{\pi}{3} \Rightarrow D_f = \mathbb{R} - \{k\pi \pm \frac{\pi}{3}\}$ $\beta) \sin x \neq 0 \Rightarrow \sin x \neq -\frac{1}{2} \Rightarrow x \neq k\pi - \frac{\pi}{6}, k\pi + \frac{5\pi}{6} \Rightarrow D_f = \mathbb{R} - \{k\pi - \frac{\pi}{6}, k\pi + \frac{5\pi}{6}\}$ $\gamma) \sin x \neq 0, \cos x \neq 0, \text{ et } x \neq k \Rightarrow \sin x \neq \cos x \Rightarrow D_f = \mathbb{R} - \{k\pi, k\pi + \frac{\pi}{4}\}$ $\delta) \sin x \neq 1 \Rightarrow \sin x \neq \pm \frac{\sqrt{2}}{2} \Rightarrow D_f = \mathbb{R} - \{k\pi + \frac{\pi}{4}, k\pi + \frac{3\pi}{4}\}$	8
$ x-1 = \frac{1}{x} > 0 \Rightarrow x > \frac{1}{x} \Rightarrow x > \frac{1}{x} \Rightarrow x > \frac{1}{x} \Rightarrow x^2 > 1 \Rightarrow x > 1 \text{ or } x < -1$ $\Rightarrow D_f = (1, +\infty) \cup (-\infty, -1)$	9
$\alpha) x \geq 0 \Rightarrow x \geq 1 \Rightarrow \sqrt{x^2} \geq 1 \Rightarrow D_f = [1, +\infty)$ $\beta) \frac{ x }{ x } = 1 \geq 0, \forall x \neq 0 \Rightarrow x \neq 0 \Rightarrow D_f = \mathbb{R} - \{0\}$	10