

الف)	ب)	ج)	د) $-f(x)$	
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الف) $x^2 - 2x + 1 > 0$ $(x-1)(x-1) > 0$ $D_f = (-\infty, 1) \cup (1, +\infty)$ $\frac{x}{+} \frac{x}{-} \frac{1}{+}$	ب) $x^2 - 4x + 5 < 0$ $(x-1)(x-5) < 0$ $D_f = [1, 5]$ $\frac{x}{+} \frac{x}{-} \frac{5}{+}$	ج) $x^2 + 4x + 5 > 0$ $(x+1)(x+5) > 0$ $D_f = (-\infty, -5] \cup [-1, +\infty)$ $\frac{x}{+} \frac{x}{-} \frac{5}{+}$	د) $x^2 - 4x + 4 \leq 0$ $(x-2)(x-2) \leq 0$ $D_f = [2, 2]$ $\frac{x}{+} \frac{x}{-} \frac{2}{+}$	۲
الف) $\frac{x^2 - 3x + 2}{x - 5} < 0$ $(x-1)(x-2) = 0 \Rightarrow \begin{matrix} x=1 \\ x=2 \end{matrix} \quad \begin{matrix} x-5 \neq 0 \\ x \neq 5 \end{matrix}$ $D_f = [-1, 2] \cup (5, +\infty)$ $\frac{x}{+} \frac{x}{-} \frac{2}{+} \frac{5}{+}$	ب) $\frac{x^2 - 1}{x^2 - 4x + 5} \geq 0$ $\frac{(x-1)(x+1)}{(x-1)(x-5)} \geq 0$ $D_f = (-\infty, -1] \cup (5, +\infty)$ $\frac{x}{+} \frac{x}{-} \frac{1}{+} \frac{5}{+}$	۳		
الف) $y = \sqrt{\frac{x^2 - 1}{x^2 - x}}$ $\frac{x^2 - 1}{x^2 - x} > 0 \Rightarrow \frac{x(x-1)(x+1)}{x(x-1)(x+1)} > 0$ $\frac{x}{+} \frac{x}{-} \frac{1}{+} \frac{1}{+}$ $D_f = (-\infty, -1) \cup (0, +\infty)$	ب) $y = \sqrt{\frac{x^2 - 14}{x^2 - 5x + 4}}$ $\frac{x^2 - 14}{x^2 - 5x + 4} \geq 0$ $\frac{(x-4)(x+4)}{(x-1)(x-4)} \geq 0$ $\frac{x}{+} \frac{x}{-} \frac{1}{+} \frac{4}{+}$ $D_f = (-\infty, -4] \cup (1, 4) \cup (4, +\infty)$	۴		
الف) $y = \sqrt{2 - \sqrt{2-x}}$ $\begin{cases} 2 - \sqrt{2-x} \geq 0 \rightarrow \sqrt{2-x} \leq 2 \rightarrow 2-x \leq 4 \rightarrow x \geq -2 \\ 2 - \sqrt{2-x} \geq 0 \rightarrow \sqrt{2-x} \leq 2 \rightarrow 2-x \leq 4 \rightarrow x \geq -2 \end{cases}$ $D_f = [-2, 2]$	ب) $y = \sqrt{3 - \sqrt{1-x}}$ $\begin{cases} 3 - \sqrt{1-x} \geq 0 \rightarrow \sqrt{1-x} \leq 3 \rightarrow 1-x \leq 9 \rightarrow x \geq -8 \\ 3 - \sqrt{1-x} \geq 0 \rightarrow \sqrt{1-x} \leq 3 \rightarrow 1-x \leq 9 \rightarrow x \geq -8 \end{cases}$ $D_f = [-8, 1]$			

الف) $y = \sqrt{r - r^2}$ $r - r^2 \geq 0 \Rightarrow r^2 \leq r \Rightarrow r' \leq r \Rightarrow$ $-\sqrt{r} \leq n \leq \sqrt{r}$ $D_f = (-\infty, -\sqrt{r}] \cup [\sqrt{r}, \infty)$	ب) $y = \sqrt{r n - 9}$ $r n - 9 \geq 0 \Rightarrow r n \geq 9 \Rightarrow n \geq \frac{9}{r}$ $\Rightarrow -\frac{9}{r} \leq n \leq \frac{9}{r}$ $D_f = [-\frac{9}{r}, \frac{9}{r}]$	6		
الف) $y = \sqrt{\frac{ n +1}{ n -r}}$ شروط في المقام $n - r \neq 0 \Rightarrow n \neq r \Rightarrow n \neq \pm r$ $D_f = \mathbb{R} - \{\pm r\}$	ب) $y = \sqrt{\frac{\sqrt{n}+1}{\sqrt{n}-r}}$ شروط في المقام $\sqrt{n} - r \neq 0 \Rightarrow \sqrt{n} \neq r \Rightarrow n \neq r^2$ $D_f = \mathbb{R} - \{r^2\}$	7		
الف) $y = \frac{\sin n}{r \cos n - 1}$ $r \cos n - 1 \neq 0$ $r \cos n \neq 1$ $\cos n \neq \frac{1}{r}$ $D_f = \mathbb{R} - \{kn + \frac{\pi}{r}, kn + \frac{\pi}{r}\}$	ب) $y = \frac{\cos n + 1}{r \sin n + 1}$ $r \sin n + 1 \neq 0$ $r \sin n \neq -1$ $\sin n \neq -\frac{1}{r}$ $D_f = \{kn \pm \frac{\pi}{r}\}$	ج) $y = \frac{\tan n + r}{\cot n - 1}$ $\cot n \neq 1$ $\cos n \neq 0$ $\Rightarrow D_f = \mathbb{R} - \{kn + \frac{\pi}{r}, kn + \frac{\pi}{r}\}$	د) $y = \frac{\sin n + 1}{r \sin^2 n - r}$ $r \sin^2 n - r \neq 0$ $\sin^2 n \neq \frac{r}{r} \Rightarrow \sin n \neq \pm \frac{\sqrt{r}}{r}$ $D_f = \mathbb{R} - \{kn + \frac{\pi}{r}, kn + \frac{\pi}{r}\}$	8
$y = \frac{1}{\sqrt{r n-r - \frac{1}{r}}}$ $r n-r - \frac{1}{r} > 0 \Rightarrow r n-r > \frac{1}{r} \Rightarrow n-r > \frac{1}{r} \Rightarrow \begin{cases} n-r > \frac{1}{r} \Rightarrow n > r + \frac{1}{r} \\ n-r < -\frac{1}{r} \Rightarrow n < r - \frac{1}{r} \end{cases}$ $D_f = (\frac{r}{2}, +\infty) \cup (\frac{r}{2}, +\infty)$			9	
الف) $y = \sqrt{r - r n }$ $r - r n \geq 0 \Rightarrow r n \leq r \Rightarrow n \leq 1$ $-1 \leq n \leq 1$ $D_f = [-1, 1]$	ب) $y = \sqrt{\frac{ n }{ n }}$ $n \neq 0$ $D_f = \mathbb{R}^+ \cup \mathbb{R} - \{0\}$	10		