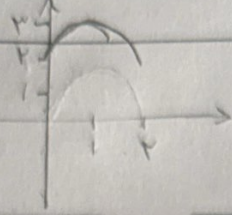
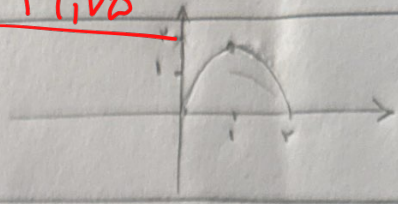
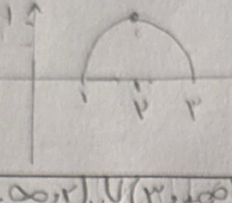
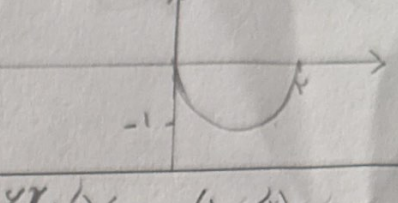


۱۹,۷۵

الف) 	ب) 	۱
ج) 	د) 	۲
الف) $x^2 - 5x + 6 > 0$ $(-\infty, 2) \cup (3, +\infty)$ $(x-2)(x-3) > 0$ + - + 2 3	ب) $x^2 - 4x + 5 < 0$ $(1, 5)$ $(x-0)(x-1) < 0$ + - + 0 1	۳
ج) $x^2 + 4x + 5 \geq 0$ $(-\infty, -5) \cup (-1, +\infty)$ $(x+5)(x+1) \geq 0$ - - + + -5 -1	د) $x^2 - 7x + 6 \leq 0$ $[1, 6]$ $(x-1)(x-6) \leq 0$ + - + 1 6	۴
الف) $\frac{x^2 - 2x + 2}{x-0} < 0 \Rightarrow \frac{(x-2)(x-1)}{(x-0)} < 0$ 1 2 0 - + - + $(2, 0) \cup (-\infty, 1)$	ب) $\frac{x^2 - 1}{x^2 - 4x + 6} \geq 0 \Rightarrow \frac{(x-1)(x+1)}{(x-0)(x-1)} \geq 0$ -1 1 0 + - - + $(-\infty, -1] \cup (0, +\infty)$	۵
الف) $y = \sqrt{\frac{x^2 - 1}{x^2 - 2x}}$ $\frac{x^2 - 1}{x^2 - 2x} \geq 0$ $\frac{x^2 - 1}{x(x-2)} \geq 0$ 1 0 2 + - + + $D_f = (-\infty, -1) \cup (0, 1) \cup (2, +\infty)$	ب) $y = \sqrt{\frac{x^2 - 14}{x^2 - 5x + 6}}$ $\frac{x^2 - 14}{x^2 - 5x + 6} \geq 0$ $\frac{(x-4)(x+4)}{(x-2)(x-3)} \geq 0$ -4 1 2 3 + - - + $D_f = (-\infty, -4) \cup (1, 2) \cup (3, +\infty)$	۶
الف) $y = \sqrt{4 - \sqrt{2-x}}$ $2-x \geq 0 \Rightarrow x \leq 2$ $4 - \sqrt{2-x} \geq 0 \Rightarrow \sqrt{2-x} \leq 4 \Rightarrow 2-x \leq 16 \Rightarrow x \geq -14$ $\Rightarrow x \in [-14, 2]$ $D_f = [-14, 2]$	ب) $y = \sqrt{2 - \sqrt{x-2}}$ $x-2 \geq 0 \Rightarrow x \geq 2$ $2 - \sqrt{x-2} \geq 0 \Rightarrow \sqrt{x-2} \leq 2 \Rightarrow x-2 \leq 4 \Rightarrow x \leq 6$ $\Rightarrow 2 \leq x \leq 6$ $D_f = [2, 6]$	۷

$\text{a)} y = \sqrt{4-x^2}$
 $4-x^2 \geq 0 \quad (x-\sqrt{4})(x+\sqrt{4}) \geq 0$
 $x^2 \leq 4$
 $x \leq 2$
 $x \geq -2$
 $D_f = [-2, 2]$

$\text{b)} y = \sqrt{3|x|-9}$
 $3|x|-9 \geq 0$
 $3|x| \geq 9$
 $|x| \geq 3$
 $x \leq -3 \cup x \geq 3$
 $D_f = (-\infty, -3] \cup [3, +\infty)$

$\text{a)} y = \sqrt{\frac{|x|+1}{|x|-1}}$
 $|x|-1 \neq 0$
 $|x| \neq 1$
 $x \neq \pm 1$
 $D_f = \mathbb{R} - \{\pm 1\}$

$\text{b)} y = \sqrt{\frac{\sqrt{x}+1}{\sqrt{x}-1}}$
 $x \geq 0$
 $\sqrt{x}-1 \neq 0$
 $\sqrt{x} \neq 1$
 $x \neq 1$
 $D_f = [0, +\infty) - \{1\}$

$\text{a)} y = \frac{\sin x}{x \cos x - 1}$
 $x \cos x \neq 1$
 $\cos x \neq \frac{1}{x}$
 $D_f = \mathbb{R} - \{k\pi + \frac{\pi}{2}, k\pi + \frac{3\pi}{2}\}$

$\text{b)} y = \frac{\cos x + 1}{x \sin x + 1}$
 $x \sin x \neq -1$
 $\sin x \neq -\frac{1}{x}$
 $D_f = \mathbb{R} - \{k\pi + \frac{\pi}{2}, k\pi + \frac{3\pi}{2}\}$

$\text{c)} y = \frac{\tan x + x}{\cot x - 1}$
 $\cot x \neq 1$
 $D_f = \mathbb{R} - \{k\pi + \frac{\pi}{4}, k\pi + \frac{5\pi}{4}\}$

$y = \frac{1}{\sqrt{|x-1| - \frac{1}{x}}}$
 $|x-1| - \frac{1}{x} > 0$
 $|x-1| > \frac{1}{x}$
 $|x-1| > \frac{1}{x} \Leftrightarrow \begin{cases} x-1 > \frac{1}{x} \Rightarrow x > \frac{1}{x-1} \\ x-1 < -\frac{1}{x} \Rightarrow x < \frac{1}{x-1} \end{cases} \Rightarrow x > \frac{1}{x-1} \cup x < \frac{1}{x-1}$

$y = \frac{1}{\sqrt{|x-1| - \frac{1}{x}}}$
 $D_f = (\frac{1}{x-1}, +\infty) \cup (-\infty, \frac{1}{x-1})$

$\text{a)} y = \sqrt{4-|x|}$
 $4-|x| \geq 0$
 $|x| \leq 4$
 $-4 \leq x \leq 4$
 $D_f = [-4, 4]$

$\text{b)} y = \sqrt{\frac{|x|}{|x|+1}}$
 $D_f = \mathbb{R} - \{0\}$