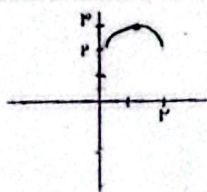
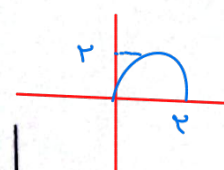
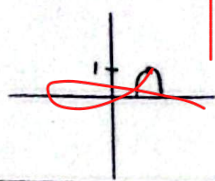
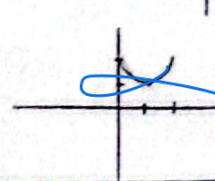
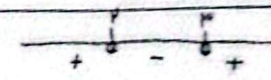
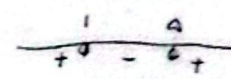
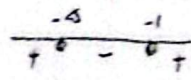
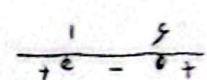
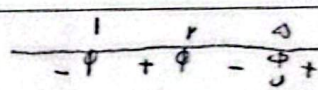
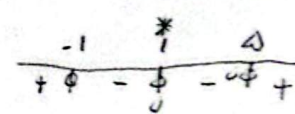
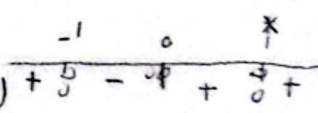
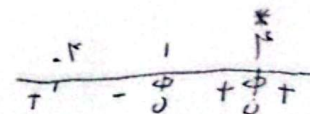


الف) 	ج) 	۱
ب) 	د) 	۲
الف) $(x-2)(x-3) > 0 \rightarrow x=2, x=3$ $(-\infty, 2) \cup (3, +\infty)$		۲
ب) $(x-1)(x-5) < 0 \rightarrow x=1, x=5$ $(1, 5)$		۲
ج) $(x+1)(x+5) \geq 0 \rightarrow x=-1, x=-5$ $(-\infty, -5] \cup [-1, +\infty)$		۲
د) $(x-2)(x-1) \leq 0 \rightarrow x=2, x=1$ $[1, 2]$		۲
الف) $\frac{(x-1)(x-2)}{x-5} < 0 \rightarrow x=1, x=2, x=5$ $(-\infty, 1) \cup (2, 5)$		۳
ب) $\frac{(x-1)(x+1)}{(x-1)(x-5)} \geq 0 \rightarrow x=1, x=-1, x=5$ $(-\infty, -1] \cup (5, +\infty)$		۳
الف) $\frac{(x-1)(x^2+2)}{x(x^2-1)} \rightarrow x=1, x=0, x=-1$ $D_f = (-\infty, -1) \cup (0, 1) \cup (1, +\infty)$		۴
ب) $\frac{(x-2)(x+2)}{(x-2)(x-1)} \rightarrow x=2, x=-2, x=1$ $D_f = (-\infty, -2] \cup (1, 2) \cup (2, +\infty)$		۴
الف) $2-x \geq 0 \rightarrow x \leq 2$ $4-\sqrt{2-x} \geq 0 \rightarrow 4 \geq \sqrt{2-x} \rightarrow 16 \geq 2-x \rightarrow x \geq -14$ $D_f = [-14, 2]$		۵
ب) $x-2 \geq 0 \rightarrow x \geq 2$ $3-\sqrt{x-2} \geq 0 \rightarrow \sqrt{x-2} \leq 3 \rightarrow x-2 \leq 9 \rightarrow x \leq 11$ $D_f = [2, 11]$		۵

الف) $4 - 2x^2 \geq 0 \rightarrow 2x^2 \leq 4 \rightarrow x^2 \leq 2 \rightarrow -\sqrt{2} \leq x \leq \sqrt{2} \rightarrow [-\sqrt{2}, \sqrt{2}]$

(ب) ✓

ب) $3|x| - 9 \geq 0 \rightarrow 3|x| \geq 9 \rightarrow |x| \geq 3 \rightarrow x \geq 3 \text{ or } x \leq -3 \rightarrow (-\infty, -3] \cup [3, +\infty)$

الف) $|x| - 3 \neq 0 \rightarrow |x| \neq 3 \rightarrow x \neq \pm 3 \rightarrow D_f = \mathbb{R} - \{\pm 3\}$

(ب) ✓

ب) $x \geq 0$
 $\sqrt{x} - 3 \neq 0 \rightarrow \sqrt{x} \neq 3 \rightarrow x \neq 9$
 $D_f = [0, +\infty) - \{9\}$

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



ب) $2 \sin x + 1 \neq 0 \rightarrow 2 \sin x \neq -1 \rightarrow \sin x \neq -\frac{1}{2} \rightarrow D_f = \mathbb{R} - \{2k\pi - \frac{\pi}{6}, 2k\pi + \frac{7\pi}{6}\}$



ج) $\cot x - 1 \neq 0 \rightarrow \cot x \neq 1 \rightarrow \frac{\sin x}{\cos x} \neq 1 \rightarrow \sin x \neq \cos x$
 $\sin x \neq 0 \rightarrow$ (unit circle diagram)
 $\cos x \neq 0 \rightarrow$ (unit circle diagram)
 $D_f = \mathbb{R} - \{\frac{k\pi}{2}, k\pi + \frac{\pi}{4}\}$

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

$2|x-2| - \frac{1}{x} > 0 \rightarrow 2|x-2| > \frac{1}{x} \rightarrow |x-2| > \frac{1}{2x}$
 $\begin{cases} x-2 > \frac{1}{2x} \rightarrow x > \frac{1}{x-2} \\ x-2 < -\frac{1}{2x} \rightarrow x < \frac{1}{2-x} \end{cases}$

$D_f = (-\infty, \frac{1}{2-x}) \cup (\frac{1}{x-2}, +\infty)$

(ب) ✓

الف) $4 - 2|x| \geq 0 \rightarrow 2|x| \leq 4 \rightarrow |x| \leq 2 \rightarrow -2 \leq x \leq 2 \rightarrow D_f = [-2, 2]$

ب) $\frac{|x|}{|x|} \geq 0 \rightarrow$ (unit circle diagram)
 $D_f = \mathbb{R} - \{0\}$

(ب) ✓

$|x| \neq 0 \rightarrow x \neq 0$