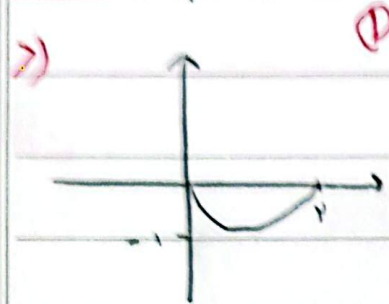
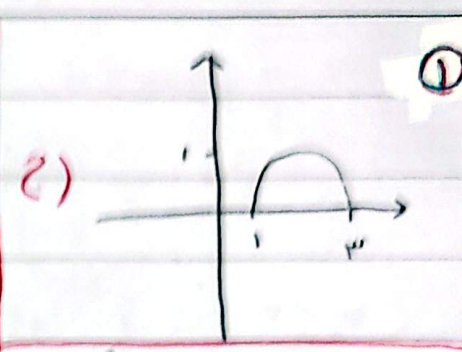
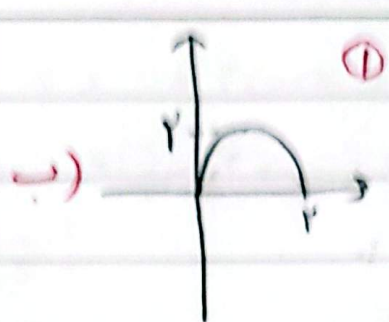
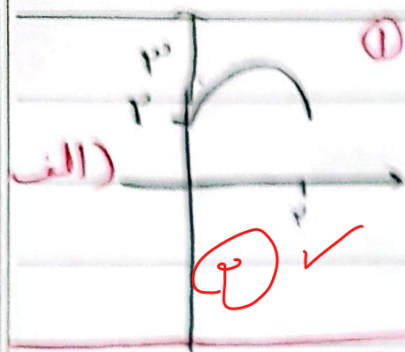




الف) $(x^2-1)(x^3-1) > 0$

ب) $(x^2-1)(x^3-1) < 0$

$$\begin{array}{c} 2 \\ + \quad - \quad + \end{array}$$

$$\begin{array}{c} 1 \\ + \quad - \quad + \end{array}$$

$P_f = (-\infty, 1) \cup (2, +\infty)$

$P_f = (1, 2)$

ج) $(x+1)(x+5) > 0$

د) $(x-1)(x-4) < 0$

الف) $(x-1)(x-2) < 0$

$$\begin{array}{c} -1 \quad -5 \\ + \quad - \quad + \end{array}$$

$$\begin{array}{c} 1 \quad 4 \\ + \quad - \quad + \end{array}$$

$$\begin{array}{c} 1 \quad 2 \\ + \quad - \quad + \end{array}$$

$P_f = [-\infty, -5] \cup [-1, +\infty)$

$P_f = [1, 4]$

$$\begin{array}{c} 1 \quad 2 \quad 5 \\ - \quad + \quad - \quad + \end{array}$$

ج) $(x-1)(x+1) > 0$

د) $(x-1)(x-5) > 0$

الف) $(x-1)(x-2) < 0$

$$\begin{array}{c} 1 \quad 5 \\ + \quad - \quad + \end{array}$$

$$\begin{array}{c} -1 \quad 1 \quad 5 \\ + \quad - \quad + \quad - \quad + \end{array}$$

$$\begin{array}{c} 1 \quad 2 \\ + \quad - \quad + \end{array}$$

$P_f = (-\infty, -1] \cup (5, +\infty)$

$P_f = (-\infty, -1) \cup (0, +\infty) - \{1\}$

الف)
$$\int \frac{(x-1)(x^2+x+1)}{x(x-1)(x+1)} dx$$

$$\begin{array}{c} -1 \quad 0 \quad 1 \\ + \quad - \quad + \end{array}$$

$$\begin{array}{c} 1 \\ + \quad - \quad + \end{array}$$

ب)
$$\int \frac{(x-1)(x+1)}{(x-1)(x-1)} dx$$

$$\begin{array}{c} -1 \quad 1 \quad 1 \\ + \quad - \quad + \end{array}$$

$P_f = (-\infty, -1] \cup (1, +\infty) - \{1\}$

الف) $1 - x \geq 0 \rightarrow x \leq 1$

(5)

$$\varepsilon - \sqrt{1-x} \geq 0 \rightarrow \sqrt{1-x} \leq \varepsilon \rightarrow 1-x \leq \varepsilon^2 \rightarrow -\varepsilon^2 \leq x$$

$$-\varepsilon^2 \leq x \leq 1 \rightarrow [-\varepsilon^2, 1]$$

(2) ✓

ب) $x - 1 \geq 0 \rightarrow 1 \leq x$

(5)

$$1 - \sqrt{x-1} \geq 0 \rightarrow \sqrt{x-1} \leq 1 \rightarrow x-1 \leq 1 \rightarrow x \leq 2 \quad \boxed{1 \leq x \leq 2}$$

$$D_f = [1, 2]$$

الف) $\varepsilon - 2x^2 \geq 0 \rightarrow 2x^2 \leq \varepsilon \rightarrow x^2 \leq \frac{\varepsilon}{2} \rightarrow -\sqrt{\frac{\varepsilon}{2}} \leq x \leq \sqrt{\frac{\varepsilon}{2}}$

(4)

$$D_f = [-\sqrt{\frac{\varepsilon}{2}}, \sqrt{\frac{\varepsilon}{2}}]$$

(2) ✓

ب) $3|x| - 9 \geq 0 \rightarrow 9 \leq 3|x| \rightarrow 3 \leq |x| \rightarrow x \leq -3 \text{ or } x \geq 3$

(4)

$$D_f = (-\infty, -3] \cup [3, \infty)$$

مجموعه پذیر ادبیل تعریف شود.

الف) $|x| - 3 \neq 0 \rightarrow |x| \neq 3$
 $x \neq \pm 3$

$$D_f = \mathbb{R} - \{\pm 3\}$$

یا

ب) $\sqrt{x} - 3 \neq 0 \rightarrow \sqrt{x} \neq 3$
 $x \neq 9$

$$D_f = \mathbb{R} - \{9\}$$

[0, +∞)

ساینا محسنی

1) الف) $\rho \cos \theta - 1 \neq 0 \rightarrow \rho \cos \theta \neq 1 \rightarrow \cos \theta \neq \frac{1}{\rho}$

$$D_f = \mathbb{R} - \left\{ \rho k\pi \pm \frac{\pi}{\rho} \right\}$$



2) $\rho \sin \theta + 1 \neq 0 \rightarrow \rho \sin \theta \neq -1 \rightarrow \sin \theta \neq -\frac{1}{\rho}$

$$D_f = \mathbb{R} - \left\{ \rho k\pi + \frac{\pi}{\rho}, \rho k\pi - \frac{\pi}{\rho} \right\}$$



3) $\cot \theta - 1 \neq 0 \rightarrow \cot \theta \neq 1$

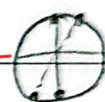
$\cos \theta \neq 0$

$\sin \theta \neq 0$

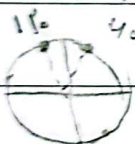
$\rho k\pi$

$$D_f = \mathbb{R} - \left\{ k\pi + \frac{\pi}{\rho}, k\pi + \frac{\pi}{\rho} \right\}$$

1, 2



4) $\rho \sin^2 \theta - \rho \neq 0 \rightarrow \rho \sin^2 \theta \neq \rho \rightarrow \sin^2 \theta \neq 1 \rightarrow \sin \theta \neq \pm 1$



$$D_f = \mathbb{R} - \left\{ \rho k\pi + \frac{\pi}{\rho}, \rho k\pi + \frac{\pi}{\rho} \right\}$$

5) $\rho |\theta - \frac{\pi}{2}| - \frac{1}{\rho} > 0 \rightarrow \rho |\theta - \frac{\pi}{2}| > \frac{1}{\rho} \rightarrow |\theta - \frac{\pi}{2}| > \frac{1}{\rho}$

$\theta - \frac{\pi}{2} > \frac{1}{\rho} \rightarrow \theta > \frac{\pi}{2} + \frac{1}{\rho}$

$D_f = (\frac{\pi}{2} + \frac{1}{\rho}, \pi) \cup (-\pi, -\frac{\pi}{2} - \frac{1}{\rho})$

$\theta - \frac{\pi}{2} < -\frac{1}{\rho} \rightarrow \theta < \frac{\pi}{2} - \frac{1}{\rho}$

3

6) الف) $\varepsilon - \rho |\theta| > 0 \rightarrow \rho |\theta| < \varepsilon$

ب) $|\theta| \neq 0$

$\theta \neq 0$

$|\theta| < \frac{\varepsilon}{\rho} \rightarrow -\frac{\varepsilon}{\rho} < \theta < \frac{\varepsilon}{\rho}$

$D_f = [-\frac{\varepsilon}{\rho}, \frac{\varepsilon}{\rho}]$

$D_f = \mathbb{R} - \{0\}$