

الف) $x \neq \pm \frac{2\sqrt{3}\pi}{3} + 2K\pi, K \in \mathbb{Z} \Rightarrow P_f = \mathbb{R} - \{x \mid \cos x = -\frac{1}{2}\}$

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ب) $P_f = \mathbb{R} - \{x = 2K\pi, K \in \mathbb{Z}\}$

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الف) $\tan x \neq -1 \Rightarrow P_f = \mathbb{R} - \{K\pi + \frac{3\pi}{4}, K\pi + \frac{7\pi}{4} \mid K \in \mathbb{Z}\}$
 $\cos x \neq 0$

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ب) $\cot x \neq 1 \Rightarrow P_f = \mathbb{R} - \{K\pi + \frac{\pi}{4} \mid K \in \mathbb{Z}\}$
 $\sin x \neq 0$

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الف) $-1 \leq x^2 - 2 \leq 1 \Rightarrow 1 \leq x^2 \leq 3 \Rightarrow P_f = [-\sqrt{3}, -1] \cup [1, \sqrt{3}]$

ب) $\sqrt{x} - 3 > 0 \Rightarrow \sqrt{x} > 3 \Rightarrow x > 9$

$-1 \leq \sqrt{x} - 3 \leq 1 \Rightarrow 2 \leq \sqrt{x} \leq 4 \Rightarrow 4 \leq x \leq 16$

$\Rightarrow P_f = [9, 16]$

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$-1 \leq |x| - 2 \leq 1$

$2 \leq |x| \leq 4$

$\pm 2 \leq |x| \leq \pm 4$

$P_f = [-4, -2] \cup [2, 4]$

ب) $x^2 + 5x + 1 > -1 \Rightarrow x^2 + 5x + 2 > 0$

$\Rightarrow (x+1)(x+2) > 0 \Rightarrow x < -2 \text{ یا } x > -1$

$x^2 + 5x + 1 \leq 0 \Rightarrow x^2 + 5x \leq -1 \Rightarrow x(x+5) \leq 0$

$\Rightarrow -5 \leq x \leq 0 \Rightarrow P_f = [-5, -2] \cup [-1, 0]$

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الف) $x^2 - 4 > 0 \Rightarrow x^2 > 4 \Rightarrow x > 2 \text{ یا } x < -2 \Rightarrow P_f = (-\infty, -2) \cup (2, +\infty)$

ب) $2 - |x| > 0 \Rightarrow 2 > |x| \Rightarrow \pm 2 > x \Rightarrow P_f = (-2, 2)$

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$$\begin{matrix} \alpha > 0 \\ \alpha < 0 \end{matrix} \left\{ \begin{matrix} \alpha > 0 \\ \alpha < 0 \end{matrix} \right\} \Rightarrow \left| \frac{1}{f} \right| = \left(\frac{1}{f_0} \right) - \{ f \} \quad \text{الف}$$

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$$n^r | \gamma^0 \Rightarrow n^r | \gamma^1 \Rightarrow n^r | \gamma^1)$$

$$x(1) = x(0) + \sqrt{1 - \frac{1}{2}} \cdot \frac{1}{2} = (0.5, 0.5)$$

$$D_f = (-1, -1) \cup (1, \infty) - \{1\}$$

$$\text{الف) } \frac{x^2 - 13x + 12}{x - 1} > 0 \Rightarrow x^2 - 13x + 12 > 0 \Rightarrow (x-1)(x-12) > 0 \Rightarrow P_1 - P_2 - [x-1]$$

$$D_f = (1, +\infty) - \{w\}$$

$$c) \frac{u(r)}{r} : \gamma_0 \rightarrow u(r) \gamma_0 \rightarrow u(r) \gamma, u \neq r$$

$$n + \delta > 0 \Rightarrow n + \delta \cdot 8, n + \delta + 1 \Rightarrow n + \delta \cdot 8$$

$$\Rightarrow P = (1, 1) \in (1, 1)$$

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$\eta \gamma$

$21.5 \leq \Delta$

$x \leq 10$

$$P = (r, 1]$$

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$$1/\log r^k - 1/r \Rightarrow 1/\log r^k > 1/r \Rightarrow k > \sqrt{r} \Rightarrow$$

$$D_f = (\sqrt{r_2}, \infty)$$

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 $\gamma_1 | f \circ \gamma$

$$D_p = \mathbb{R}$$

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$$S^{\mathbb{N}} \models \varphi \Rightarrow \mathcal{H} \models \varphi$$

$$D \neq \mathbb{R} - \{0\}$$

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$$\frac{D}{F} = IR - \left\{ \frac{1}{F} \right\}$$

$$D = IR - \left\{ \log \frac{r}{r_0} \right\}$$

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$$\text{a1) } f_{n+1} \geq 0 \Rightarrow f_{n+1} \in \mathbb{Z} \Rightarrow x = \frac{k \cdot 1}{1} \Rightarrow k \in \mathbb{W}$$

$$\Rightarrow P = \left\{ -\frac{1}{5}, 0, \frac{1}{5}, \frac{1}{15}, \dots \right\}$$

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$$\frac{r_n - r}{r_n - \sigma} \in W, n \neq \frac{\sigma}{r} \Rightarrow D = \left\{ x \in \mathbb{R} \mid \frac{r_n - r}{r_n - \sigma} \in W, n \neq \frac{\sigma}{r} \right\}$$

$$D_f = \{u \mid u = \frac{\partial k - r}{r k - r}, k \in W\}$$