

الف) x^3 (این)

$$(x-1)(x^2+x-3) \neq 0$$

$$x^2+x-3=0$$

$$(x+5)(x-1)=0$$

$$x_1 = -\frac{5}{2}, \frac{1}{2}$$

ب) x^3

$$(x+1)(x^2+x-3) \neq 0$$

$$x^2+x-3=0$$

$$(x+1)(x-1)=0$$

$$x_1 = -1, 1$$

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الف) x^3 (این)

$$(x+1)(x^2-x+1) \neq 0$$

$$x^2-x+1=0$$

$$x_1 = \frac{1}{2} \pm \frac{\sqrt{3}}{2}i$$

ب) x^3

$$(x-1)(x^2+x+1) \neq 0$$

$$x^2+x+1=0$$

$$x_1 = -\frac{1}{2} \pm \frac{\sqrt{3}}{2}i$$

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الف) $x > 1 \rightarrow x^2 + 0x + 0 - 2x + 0 \neq 0$

$$x^2 - 2x \neq 0$$

$$x(x-2) \neq 0$$

$$x \neq 0, 2$$

ب) $x > 1 \rightarrow x^2 + 0x + 0 - 2x + 0 \neq 0$

$$x^2 - 2x \neq 0$$

$$x(x-2) \neq 0$$

$$x \neq 0, 2$$

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الف) $\{x\} - 2 \geq 0$

$$\{x\} \geq 2$$

$$-x \geq 2 \quad x \leq -2$$

$$x \leq -2$$

ب) $\{x\} - 2 \geq 0$

$$\{x\} \geq 2$$

$$-x \geq 2 \quad x \leq -2$$

$$x \leq -2$$

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الف) $\{x - \frac{1}{3}\} + \{x - \frac{1}{3} + 1\}$

$$\{x - \frac{1}{3}\} + 1 \geq 0$$

$$\{x - \frac{1}{3}\} \geq -1$$

$$\{x - \frac{1}{3}\} \geq -\frac{1}{3}$$

ب) $\{x - \frac{1}{3}\} + \{x - \frac{1}{3} + 1\}$

$$\{x - \frac{1}{3}\} + 1 \geq 0$$

$$\{x - \frac{1}{3}\} \geq -1$$

$$\{x - \frac{1}{3}\} \geq -\frac{1}{3}$$

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$$\{ \exists x, \frac{\lambda \wedge m}{p \wedge q} = x \mid x \} = \emptyset$$

1 $\frac{\lambda \wedge m}{p \wedge q} \exists x$ $p \wedge m \exists m \lambda \wedge x m$ $m \wedge m \lambda \exists p \wedge x m$ $m \exists \frac{\lambda \wedge m}{p \wedge q} \quad (1)$	$\frac{(m \wedge \lambda) \wedge x}{m \wedge \lambda \wedge x} \leftarrow \frac{(m \wedge \lambda) \wedge x}{m \wedge \lambda \wedge x}$ $+ \phi - \phi \wedge$ $\{ m \wedge \lambda \} = \emptyset$ $\frac{(m \wedge \lambda) \wedge x}{m \wedge \lambda \wedge x} \quad (1)$
6 $(\exists x \wedge \lambda) = \emptyset$ $\frac{\lambda \wedge m}{p \wedge q} \exists x$ $p \wedge m \exists m \lambda \wedge x m$ $m \wedge m \lambda \exists p \wedge x m$ $m \exists \frac{\lambda \wedge m}{p \wedge q} \quad (1)$	$(\exists x \wedge \lambda) = \emptyset$ $\frac{\lambda \wedge m}{p \wedge q} \exists x$ $p \wedge m \exists m \lambda \wedge x m$ $m \wedge m \lambda \exists p \wedge x m$ $m \exists \frac{\lambda \wedge m}{p \wedge q} \quad (1)$
4 $x \wedge \lambda \wedge p$ $1 \wedge x \wedge \lambda \wedge p$ $\frac{\lambda \wedge m}{p \wedge q} \exists x$ $p \wedge m \exists m \lambda \wedge x m$ $m \wedge m \lambda \exists p \wedge x m$ $m \exists \frac{\lambda \wedge m}{p \wedge q} \quad (1)$	$\{ 1 - \lambda \} = \emptyset$ $\frac{\lambda \wedge m}{p \wedge q} \exists x$ $p \wedge m \exists m \lambda \wedge x m$ $m \wedge m \lambda \exists p \wedge x m$ $m \exists \frac{\lambda \wedge m}{p \wedge q} \quad (1)$
1 $(\frac{\lambda \wedge m}{p \wedge q} \exists x, \frac{\lambda \wedge m}{p \wedge q} \exists x) = \emptyset$ $\frac{\lambda \wedge m}{p \wedge q} \exists x$ $p \wedge m \exists m \lambda \wedge x m$ $m \wedge m \lambda \exists p \wedge x m$ $m \exists \frac{\lambda \wedge m}{p \wedge q} \quad (1)$	$\frac{\lambda \wedge m}{p \wedge q} \exists x$ $p \wedge m \exists m \lambda \wedge x m$ $m \wedge m \lambda \exists p \wedge x m$ $m \exists \frac{\lambda \wedge m}{p \wedge q} \quad (1)$
2 $(\frac{\lambda \wedge m}{p \wedge q} \exists x, \frac{\lambda \wedge m}{p \wedge q} \exists x) = \emptyset$ $\frac{\lambda \wedge m}{p \wedge q} \exists x$ $p \wedge m \exists m \lambda \wedge x m$ $m \wedge m \lambda \exists p \wedge x m$ $m \exists \frac{\lambda \wedge m}{p \wedge q} \quad (1)$	$\frac{\lambda \wedge m}{p \wedge q} \exists x$ $p \wedge m \exists m \lambda \wedge x m$ $m \wedge m \lambda \exists p \wedge x m$ $m \exists \frac{\lambda \wedge m}{p \wedge q} \quad (1)$

۳- کمن عبارت مفرج را دستاری می‌کنیم تا کی ساده تر شود...

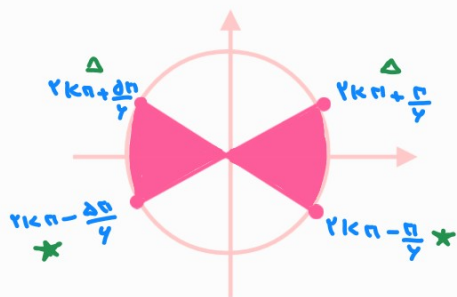
$$(x^2 - x_{n+1}) - \omega/|x-1| + 4 \rightarrow (x-1)^2 - \omega/|x-1| + \varepsilon \xrightarrow{|x-1|=\delta} t^2 - \omega t + 4$$

$$(t-1)(t-4) = 0 \rightarrow t=1, t=4$$

$$|x-1|=1 \rightarrow x=2 \text{ و } 0 \quad |x-1|=\varepsilon \rightarrow x=\omega, -3 \rightarrow Df = \mathbb{R} - \{-3, 0, 2, \omega\}$$

۴- الف) $[-x] - 2 \geq 0 \rightarrow [-x] \geq 2 \rightarrow -x \geq 2 \rightarrow x \leq -2 \rightarrow Df = (-\infty, -2]$

۴- ب) $1 - 4 \sin^2 x \geq 0 \rightarrow 4 \sin^2 x \leq 1 \rightarrow \sin^2 x \leq \frac{1}{4} \rightarrow -\frac{1}{2} \leq \sin x \leq \frac{1}{2}$



$$\rightarrow Df = [k\pi - \frac{\pi}{4}, k\pi + \frac{\pi}{4}]$$

۵- الف) $4 \sin x - 1 \geq 0 \rightarrow \sin x \geq \frac{1}{4}$

$$\rightarrow Df = [x_k\pi + \frac{\pi}{4}, x_k\pi + \frac{5\pi}{4}]$$

۵- ب) $1 - 4 \cos x \geq 0 \rightarrow \cos x \leq \frac{1}{4}$

$$\rightarrow Df = [x_k\pi + \frac{\pi}{4}, x_k\pi + \frac{7\pi}{4}]$$

$$A - \text{الف} - 1 \quad -1 \leq x^r + w_n + 1 \leq 1 \xrightarrow{\frac{q}{\varepsilon} - \frac{\delta}{\varepsilon}} -1 \leq x^r + w_n + \frac{q}{\varepsilon} - \frac{\delta}{\varepsilon} \leq 1$$

$$\frac{1}{\varepsilon} \leq x^r + w_n + \frac{q}{\varepsilon} \leq \frac{q}{\varepsilon} \rightarrow \frac{1}{\varepsilon} \leq \left(x + \frac{w}{r}\right)^r \leq \frac{q}{\varepsilon}$$

$$\int \left(x + \frac{w}{r}\right)^r \leq \frac{q}{\varepsilon} \rightarrow -\frac{r}{r} \leq x + \frac{w}{r} \leq \frac{r}{r} \rightarrow -1 \leq x \leq 0 \quad I$$

$$\int \left(x + \frac{r}{r}\right)^r \geq \frac{1}{\varepsilon} \rightarrow x + \frac{r}{r} \geq \frac{1}{r} \rightarrow x \geq -1 \quad \text{و} \quad x + \frac{r}{r} \leq -\frac{1}{r} \rightarrow x \leq -2 \quad II$$

$$I \cap II \rightarrow \emptyset = [-2, -2] \cup [-1, 0]$$