

رها موسوی با استفاده از سری های تالیف ۳ یازدهم فصل ۱

سوال ۱

$$\text{الف)} \quad \frac{x+3}{2x^3+3x^2-1x+3} = \frac{x+3}{(x-1)(2x-1)(x+3)}$$

$$D_f = R_f = \left\{ 1, \frac{1}{2}, -3 \right\}$$

$$\text{ب)} \quad \frac{x+3}{(x+1)(x+3)(2x+1)}$$

$$D_f = R_f = \left\{ -1, -3, -\frac{1}{2} \right\}$$

سوال ۲

$$\text{الف)} \quad \frac{x+3}{(x-1)(x^2+x+1) - 3x(x-1)} = \frac{x+3}{(x-1)(x^2-x+1)}$$

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$$D_f = R_f = \{1\}$$

$$\text{ب)} \quad \frac{x+3}{(x-1)(x^2-x+1)}$$

$$\begin{array}{c|c|c|c|c} -3 & & 1 & & \\ \hline + & 0 & - & 0 & + \\ \hline 1 & & 0 & & 1 \end{array}$$

$$D_f = (-\infty, -3] \cup (1, +\infty)$$

PARAMOUNT



Date :

Subject :

سوال ٣

$$x^2 + 3x \quad \text{f} \quad x^2 - 4x + 10$$

$$D_f = \mathbb{R}_f - \{-3, 0, 1, 4\}$$

$$x(x+3)$$

$$(x-2)(x-1)$$

الف) $[-x] < 2 \rightarrow -x > 2 \rightarrow x < -2$ سوال ٤

$$D_f = (-\infty, -2]$$

ب) $\frac{x^2 + 4}{(x-3)(x+1)}$ $\rightarrow [x] = -1 \rightarrow -1 < x < 3$

$$\rightarrow [x] = 3 \rightarrow 3 < x < 4$$

$$D_f = \mathbb{R} - [-1, 0) \cup [3, 4)$$

سوال ٥

الف) $[x - \frac{1}{\mu}] + [x + \frac{\mu}{\mu}] \geq 0$

$$[x - \frac{1}{\mu}] + 1 + [x + \frac{\mu}{\mu}] \geq 1 \rightarrow 2[x + \frac{\mu}{\mu}] \geq 1$$

$$\rightarrow [x + \frac{\mu}{\mu}] \geq \frac{1}{2} \rightarrow [x + \frac{\mu}{\mu}] \geq 1 \rightarrow x + \frac{\mu}{\mu} \geq 1$$

$$D_f = [\frac{1}{\mu}, +\infty)$$

$$x \geq \frac{1}{\mu}$$

PARAMOUNT

$$ب) \left[x - \frac{1}{p} \right] + \left[\frac{1}{p} - x \right] \geq 0$$

$$x - \frac{1}{p} \in \mathbb{Z} \Rightarrow D_f = \left\{ x \mid x = k + \frac{1}{p}, k \in \mathbb{Z} \right\}$$

سوال 4

$$الف) \frac{\cot x + 1}{\tan x + 1} \rightarrow \frac{\tan x + 1}{\cos x + 0}$$

$$D_f = \mathbb{R} \setminus \left\{ k\pi + \frac{3\pi}{4}, k\pi + \frac{\pi}{4} \right\}$$

$$ب) (1 - \sqrt{p} \sin x)(1 + \sqrt{p} \sin x) \geq 0 \rightarrow -\frac{1}{\sqrt{p}} \leq \sin x \leq \frac{1}{\sqrt{p}}$$

$$D_f = \left[k\pi - \frac{\pi}{4}, k\pi + \frac{\pi}{4} \right]$$

سوال 5

$$الف) \sin x \geq \frac{1}{p} \rightarrow D_f = \left[2k\pi + \frac{\pi}{4}, 2k\pi + \frac{5\pi}{4} \right]$$

$$ب) \cos x \leq \frac{1}{p} \rightarrow D_f = \mathbb{R} \setminus \left(2k\pi - \frac{\pi}{p}, 2k\pi + \frac{\pi}{p} \right)$$

الف) $-1 < x^2 + 3x + 1 < 1$

سوال ٩

• $(x+1)(x+2) > 0$

-2	-1
+	-
+	+

• $x(x+3) < 0$

-3	0
+	-
+	+

$\Rightarrow D_f = [-3, -2] \cup [-1, 0]$

ب) $\sqrt{5-2x} < 1 \rightarrow 0 < 5-2x < 1$
 $4 < 2x < 5$
 $2 < x < \frac{5}{2}$

سوال ٩

الف) $1 - \log_x^2 > 0$ $\log_x^2 < 1$

$x > 0$ / $x < 1 \Rightarrow 0 < x < 1$

$D_f = (0, 1)$

ب) $1 - \log_{\frac{1}{x}}^2 > 0 \rightarrow \log_{\frac{1}{x}}^2 < 1 \rightarrow x > 0$ / $x < \frac{1}{x}$

$D_f = (0, \frac{1}{x})$

سوال 10

$$A = \begin{pmatrix} 1 & 1 \\ 1 & 1 \end{pmatrix}$$

$$P^{-1} (P A P^{-1} - I)$$

$$= \begin{pmatrix} 1 & 1 \\ 1 & 1 \end{pmatrix} - I = \begin{pmatrix} 0 & 1 \\ 1 & 0 \end{pmatrix}$$

$$P^{-1} \begin{pmatrix} 0 & 1 \\ 1 & 0 \end{pmatrix} P$$

$$D_f = \{1, \mu\}$$

$$b) \frac{\mu x + \omega}{\mu x + \mu} \in W \rightarrow x = \frac{\omega - \mu}{\mu - \mu}$$

$$D_f = \left\{ x \mid x = \frac{\omega - \mu}{\mu - \mu}, \mu \in W \right\}$$