

Subject:

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المسألة

الاجابة

$$الف) \frac{x+1}{(x-1)(5x^2-14x+12)} \neq \frac{Ax^2+Bx+C}{(x-1)(5x^2-14x+12)}$$

$$x=1 \quad \frac{1^2-1 \cdot 1^2 + 1(1-12)}{(1-1)(5-14+12)} \neq \frac{A(1)^2+B(1)+C}{(1-1)(5-14+12)}$$

$$\frac{1^2-1 \cdot 1^2 + 1(1-12)}{(1-1)(5-14+12)} \neq \frac{A(1)^2+B(1)+C}{(1-1)(5-14+12)}$$

$$\frac{1^2-1 \cdot 1^2 + 1(1-12)}{(1-1)(5-14+12)} \neq \frac{A(1)^2+B(1)+C}{(1-1)(5-14+12)}$$

$$x = \frac{-(-14) \pm \sqrt{14^2 - 4 \cdot 5 \cdot 12}}{2 \cdot 5} = \frac{14 \pm \sqrt{196 - 240}}{10} = \frac{14 \pm \sqrt{-44}}{10}$$

$$\frac{A}{x}$$

$$\frac{B}{x}$$

$$\frac{15x-12}{-15x+12}$$

$$D_f = \mathbb{R} - \{1\}, \left\{\frac{12}{5}\right\}, \left\{\frac{12}{5}\right\}$$

$$ب) \frac{x+1}{(x+1)(3x^2-5x-8)} \neq \frac{Ax^2+Bx+C}{(x+1)(3x^2-5x-8)}$$

$$x=-1 \quad \frac{(-1)^2-1 \cdot (-1)^2 + 1(-1-8)}{(-1+1)(3-5-8)} \neq \frac{A(-1)^2+B(-1)+C}{(-1+1)(3-5-8)}$$

$$\frac{1^2-1 \cdot 1^2 + 1(1-8)}{(1-1)(3-5-8)} \neq \frac{A(1)^2+B(1)+C}{(1-1)(3-5-8)}$$

$$\frac{1^2-1 \cdot 1^2 + 1(1-8)}{(1-1)(3-5-8)} \neq \frac{A(1)^2+B(1)+C}{(1-1)(3-5-8)}$$

$$\frac{1^2-1 \cdot 1^2 + 1(1-8)}{(1-1)(3-5-8)} \neq \frac{A(1)^2+B(1)+C}{(1-1)(3-5-8)}$$

$$x = \frac{-(-5) \pm \sqrt{5^2 - 4 \cdot 3 \cdot (-8)}}{2 \cdot 3} = \frac{5 \pm \sqrt{25 + 96}}{6} = \frac{5 \pm \sqrt{121}}{6} = \frac{5 \pm 11}{6}$$

$$x = \frac{5+11}{6} = \frac{16}{6} = \frac{8}{3}$$

$$\frac{-5x^2-12x-8}{-5x^2-12x-8}$$

$$-5x^2-12x-8$$

$$\frac{-5x^2-12x-8}{-5x^2-12x-8}$$

$$b^2-4ac$$

$$14-15 \cdot 12 - 12 = 14-180-12 = -178$$

$$\frac{12}{4} = 3$$

$$D_f = \mathbb{R} - \{-1\}, \left\{\frac{8}{3}\right\}, \left\{\frac{-5}{6}\right\}$$

$$ب) \sqrt{3x-2} \geq 0$$

$$3x-2 \geq 0$$

$$x \geq \frac{2}{3}$$

$$x - \sqrt{3x-2} \neq 0$$

$$x \neq \sqrt{3x-2}$$

$$x^2 + 3x - 2 \neq 0$$

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

المسألة

الف)

$$3-2x \geq 0 \quad 2x \leq 3$$

$$x \leq \frac{3}{2}$$

$$x - \sqrt{3-2x} \neq 0$$

$$x^2 \neq 3-2x$$

$$x^2 + 2x - 3 \neq 0$$

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

$$(1) \quad (-3)$$

$$D_f = (-\infty, 1) \cup (1, \frac{3}{2}]$$

AFAGH

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الف) $y \cos x - 1 \neq 0$ $y \cos x \neq 1$ $\cos x \neq \frac{1}{y}$

$D_f = \mathbb{R} - \left\{ \frac{\pi}{y} + 2K\pi, \frac{6\pi}{y} + 2K\pi \right\}$

ب) $y \sin x + 1 \neq 0$ $\sin x \neq -\frac{1}{y}$

$D_f = \mathbb{R} - \left\{ \frac{3\pi}{y} + 2K\pi, \frac{11\pi}{y} + 2K\pi \right\}$

ج) $\frac{\sin x}{\cos x} - 1 \neq 0$ $\cot x - 1 \neq 0$ $\cot x \neq 1$

$D_f = \{K\pi, \frac{\pi}{y} + K\pi, \frac{\pi}{y} + K\pi\}$

د) $f \sin^2 x - r \neq 0$ $f \sin^2 x \neq r$ $\sin^2 x \neq \frac{r}{f}$ $\sin x = \pm \sqrt{\frac{r}{f}}$

$D_f =$

الف) $(x+r)(x-r) > 0$

$D_f = (-\infty, -r) \cup (r, +\infty)$

ب) $x^2 - 4x + a < 0$
 $(x-1)(x-a)$

$D_f = (1, a)$

ج) $(x+1)(x+a) \geq 0$

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

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

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$$1) \quad (x-1)(x-4) \leq 0$$

$$\begin{array}{c} 1 \quad 4 \\ | \quad | \\ + \quad - \quad + \end{array} \quad D_f = [1, 4]$$

$$2) \quad \frac{(x-1)(x-2)}{x-5} < 0$$

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

حل

ⓐ

$$D_f = (-\infty, 1) \cup (2, 5)$$

$$3) \quad \frac{x(x-1)}{(x-1)(x-5)} \geq 0$$

$$\begin{array}{c} 0 \quad 1 \quad 5 \\ | \quad | \quad | \\ + \quad - \quad - \quad + \end{array}$$

$$D_f = (-\infty, 0] \cup (5, +\infty)$$

$$4) \quad x^r - 1 \neq 0$$

$$x \neq 1$$

$$x \geq r$$

$$\frac{(x-1)(x-r)}{(x-1)(x^r + x + 1)}$$

حل

$$\begin{array}{c} r \\ | \quad | \\ - \quad - \quad + \end{array}$$

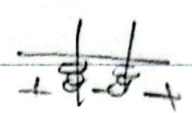
$$D_f = [r, +\infty)$$

$$5) \quad x^r - 1 = 0 \quad x^r \neq 1 \quad x \neq 1, -1$$

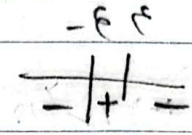
$$D_f = \mathbb{R} - \{ \pm 1 \}$$

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ا) $x^2 - 3x > 0$ $x(x-3) > 0$  سوال ٢

$D_f = (-\infty, 0) \cup (3, +\infty)$

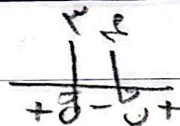
ب) $(\varepsilon - n)(\varepsilon + n) > 0$  $(-\varepsilon, \varepsilon)$

$|n| - 2 > 0$ $|n| > 2 \rightarrow \begin{matrix} n < -2 \\ n > 2 \end{matrix} \rightarrow (-\infty, -2) \cup (2, +\infty)$

$|n| - 2 \neq 1$ $|n| \neq 3$ $n \neq \pm 3$

$D_f = (-\infty, -2) \cup (2, \infty) - \{\pm 3\}$

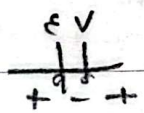
ج) $(n-2)(n-4) > 0$



١. $-n > 0$ $n < 0$

$D_f = (-\infty, 0) - \{4\}$

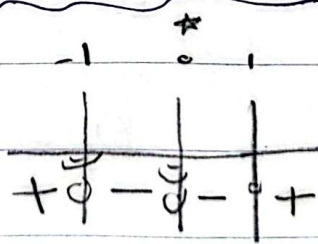
١. $-n \neq 1$ $4 \neq n$

د) $(x-5)(x-7) > 0$  $(-\infty, 5] \cup [7, +\infty)$

$(4-n)(4+n) > 0$ $(-4, 4)$ $D_f = (-4, 4) - \{1\}$

$n > 0$ $n \neq 1$

$\frac{x^2 - n}{n^2 + n}$ $\frac{x(n-1)}{x(n+1)}$



سوال ٣

	-1	0	1	
n	-	-	+	+
$n-1$	-	-	-	+
n	-	-	+	+
$n+1$	-	-	-	+
	+	-	-	+

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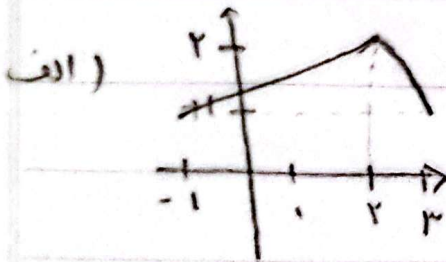
$$x - f(x) = 0 \quad x = f(x) \quad x = (-1, 3)$$

$$-f(x) \neq 0 \quad x \neq \frac{-2}{4}$$

	-2	-1	0	1	2	3
$x - f(x)$	-	+	+	+	+	-
$f(x)$	+	+	+	-	-	+
	-	+	-	+	+	-

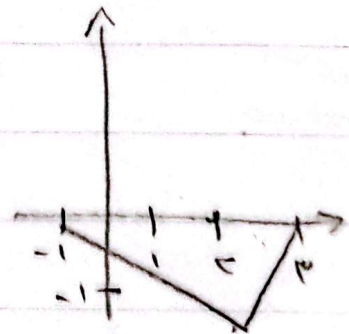
سوال ۱۹

$$D_f(-2, -1] \cup (1, 3)$$

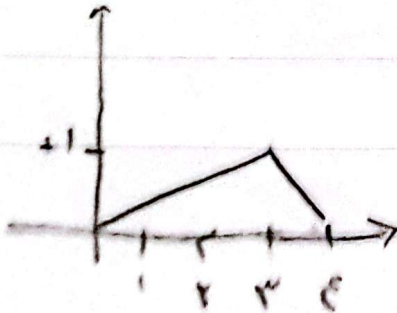


سوال ۱۵

ج)



ب)



د)

