

Date:

Sub:

الحل، مبين

$$\text{الف) } y = \frac{x+5}{5x^2-5x-14x-10} \neq 0$$

$$(5x+5)(x-2)(x-1)$$

$$D_f = \mathbb{R} - \left\{ \frac{5}{5}, \frac{2}{1}, \frac{1}{1} \right\}$$

$$\begin{array}{r} 5x^2-5x-14x-10 \mid x-1 \\ \underline{5x^2-5x-10} \\ -14x-10 \\ \underline{-14x+14} \\ -24 \end{array} \quad \begin{array}{r} x-1 \\ \underline{5x^2-10x+5} \\ 5x^2-14x-10 \end{array}$$

$$\text{ب) } y = \frac{x+5}{5x^2-x^2-14x-5} \neq 0$$

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

$$\begin{array}{r} 5x^2-x^2-14x-5 \mid x+1 \\ \underline{5x^2-14x-5} \\ -14x-5 \\ \underline{-14x-14} \\ 9 \end{array} \quad \begin{array}{r} x+1 \\ \underline{5x^2+5x+5} \\ 5x^2-14x-5 \end{array}$$

$$\text{الف) } y = \frac{x+1}{x-\sqrt{5-5x}} \quad x \leq \frac{5}{5}$$

$$D_f = (-\infty, \frac{5}{5}] - \{1, -5\}$$

$$\begin{array}{r} x + \sqrt{5-5x} \\ x^2 + 2x - 5 \neq 0 \\ (x+5)(x-1) \neq 0 \\ x \neq -5, -1 \end{array}$$

$$\text{ب) } y = \frac{x+5}{x-\sqrt{5x-5}} \quad x \geq \frac{5}{5}$$

$$D_f = \left[\frac{5}{5}, +\infty \right) - \{1, 5\}$$

$$\begin{array}{r} x + \sqrt{5x-5} \\ x^2 - 5x + 5 \neq 0 \\ (x-1)(x-5) \neq 0 \\ x \neq 1, 5 \end{array}$$

$$\text{الف) } y = \frac{\sin x}{5\cos x - 1} \quad \cos x \neq \frac{1}{5}$$

$$D_f = \mathbb{R} - \left\{ k\pi \pm \frac{\pi}{5} \right\}$$



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تعاريف

$$ب) y = \frac{\cos x + 1}{\sin x + 1}$$

$$\sin x + \frac{-1}{1}$$

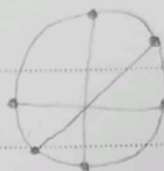


$$D_f = \mathbb{R} - \left\{ k\pi - \frac{\pi}{4}, k\pi - \frac{3\pi}{4} \right\}$$

$$ج) y = \frac{\tan x + 1}{\cot x - 1}$$

$$\frac{\sin x}{\cos x} + 1$$

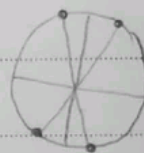
$$\cot x + 1$$



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

$$د) y = \frac{\sin x + 1}{\cos x - 1}$$

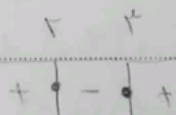
$$\sin x + \frac{1}{\cos x - 1}$$



$$D_f = \mathbb{R} - \left\{ k\pi \pm \frac{\pi}{2} \right\}$$

$$هـ) x^2 - 2x + 4 > 0$$

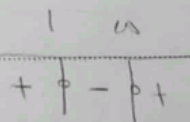
$$(x-1)(x-3) > 0$$



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

$$و) x^2 - 9x + 14 < 0$$

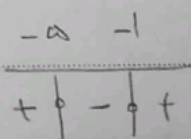
$$(x-1)(x-14) < 0$$



$$D_f = (1, 14)$$

$$ز) x^2 + 4x + 4 \geq 0$$

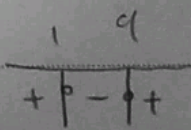
$$(x+1)(x+4) \geq 0$$



$$D_f = (-\infty, -4] \cup [-1, +\infty)$$

$$ح) x^2 - 4x + 4 \leq 0$$

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



$$D_f = [1, 4]$$

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$$أ) \frac{x^2 - 2x + 1}{x - 2} < 0$$

$$\frac{1}{-} \frac{2}{+} \frac{1}{-} \frac{1}{+}$$

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

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

$$ب) \frac{x^2 - 1}{x^2 - 9x + 4} \geq 0$$

$$\frac{-1}{+} \frac{1}{-} \frac{1}{-} \frac{4}{+}$$

$$\frac{(x-1)(x+1)}{(x-1)(x-4)} \geq 0$$

$$D_f = (-\infty, -1] \cup (4, +\infty)$$

$$أ) y = \sqrt{\frac{x^2 - 5x + 6}{x^2 - 1}} \geq 0$$

$$\frac{1}{-} \frac{2}{-} \frac{1}{+}$$

$$D_f = [2, +\infty)$$

9

$$ب) y = \sqrt{\frac{x^2 - 7x + 6}{x^2 - 1}} \neq 0$$

$$x^2 \neq 1$$

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

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$$أ) y = \log(x^2 - 5x) > 0 \quad x(x-5) > 0$$

$$\frac{0}{+} \frac{5}{-} \frac{1}{+}$$

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

$$ب) y = \log_{|x|-1} |x|-2$$

$$|x|-2 > 0$$

$$|x|-1 > 0$$

$$|x|-1 \neq 1$$

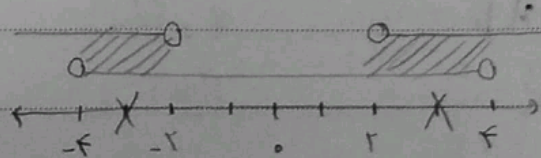
$$-1 < x < 1$$

$$2 < x$$

$$x < -2$$

$$x \neq \pm 1$$

$$D_f = (-2, -1) - \{-1\} \cup (2, 4) - \{1\}$$



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تفاضل

مضامین

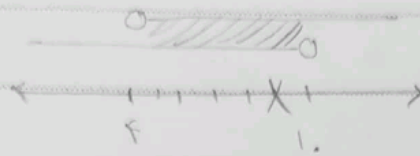
$$ج) y = \log \frac{x^2 - x + 1}{x - 1}$$

$$\frac{(x-1)(x-1)}{(x-1)} > 0$$

$$-\frac{1}{1} - \frac{1}{1} + \dots \rightarrow (1, +\infty)$$

$$D_f = (1, 1) \cup \{9\}$$

$$x < 1, 1 - x + 1, x \neq 1$$



$$د) y = \sqrt{x^2 - 11x + 18} + \log \sqrt{4 - x^2}$$

$$\frac{(x-1)(x-1)}{(x-1)} > 0$$

$$\sqrt{4 - x^2} > 0, x > 0$$

$$-\frac{1}{1} - \frac{1}{1} + \dots$$

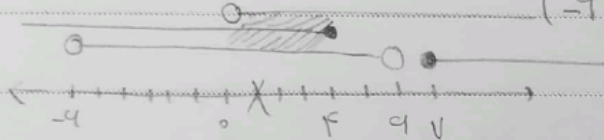
$$4 - x^2 > 0, x < 1$$

$$-4 < x < 4$$

$$[-\infty, 4] \cup [4, +\infty)$$

$$(-4, 4)$$

$$D_f = [0, 4] \cup \{1\}$$



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

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

$$-1 \quad 0 \quad 1$$

$$+\frac{1}{1} - \frac{1}{1} - \frac{1}{1} +$$

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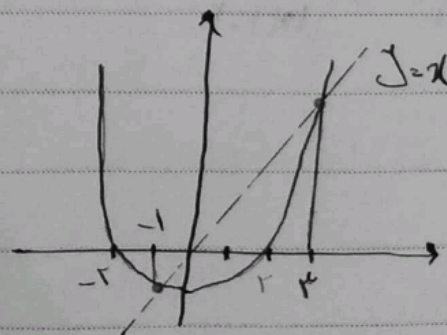
$$y = \sqrt{\frac{x - f(x)}{f(x)}}$$

$$x - f(x) = 0$$

$$x = f(x)$$

$$f(x) = 0$$

$$-\frac{1}{1} - \frac{1}{1} + \dots$$

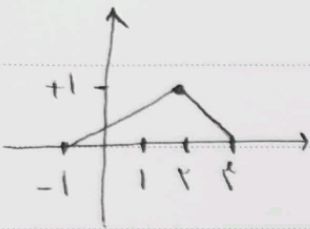


$$D_f = (-1, 1] \cup (1, 4]$$

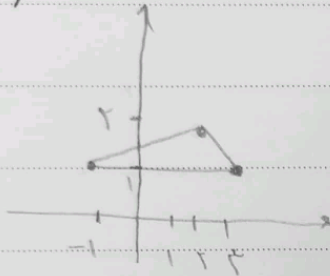
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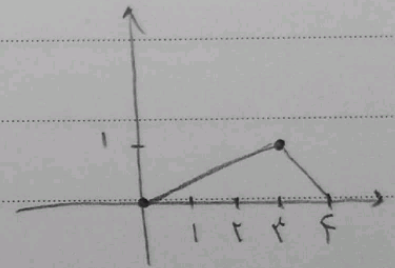
نما، مبصر



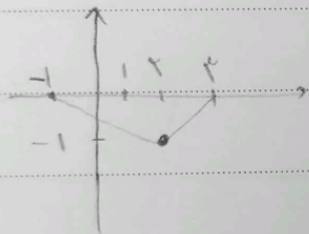
الف) $f(x) + 1$



ب) $f(x-1)$



ج) $-f(x)$



د) $f(x+1) + 2$

