

$$x^2 - 9x + 20 < 0$$
$$(x-1)(x-2)$$
$$\begin{array}{c} \xleftarrow{\quad 1 \quad 2 \quad} \xrightarrow{\quad} (\\ + \quad - \quad - \quad + \end{array}$$
$$(1 \quad 2) \quad \textcircled{2} \quad \checkmark$$

$x^2 - 5x + 4 > 0$
 $(x-2)(x-4)$

(الف)

$$\begin{array}{ccccccc} & 2 & & 4 & & & \\ & \leftarrow & & \rightarrow & & & \\ & + & - & + & - & + & \end{array}$$

$$[-\infty, 2) \cup (4, +\infty)$$

$$x^2 - 5x + 4 \leq 0$$

$$(x-1)(x-4)$$

$$\begin{array}{c} \xleftarrow{\quad} \quad \quad \quad \xrightarrow{\quad} \\ +b \quad -b \quad + \end{array}$$

$$[1 \quad 4]$$

$$u^r + y_{u+0} \geq 0$$

$$(u+1)(u+0) \leftarrow \begin{array}{ccc} -0 & -1 & \\ + & 0 & - & 0 & + \end{array} \right. (C)$$

$$[-\infty - 0] \cup [-1 + \infty]$$

ج) $\frac{x^2 - 14x + 49}{x - 7} \rightarrow (x-7)(x-7)$
 $\frac{x-7}{x-7} < 0$
 $0 < x - 7$
 $P_f = [-\infty, 7) \cup (7, \infty)$

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

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

$$D = [-1, 1) \cup (2, \infty)$$

الف) $y = \sqrt{\frac{x^4 - 1}{x^4 - 1}}$ $D_f = \mathbb{R} \setminus \{-1, 1\} \cup (-\infty, -1) \cup (1, +\infty)$

$$\therefore y = \sqrt{\frac{x^2 - 19}{x^2 - 9x + 15}} \sqrt{\frac{(x+5)(x-5)}{(x-5)(x-1)}} \quad D_f = \mathbb{R} - \{1, 5\}$$

$$y = \sqrt{x-1} - \sqrt{x-2} \quad (الف)$$

$$x-1 \geq 0 \quad [x \geq 1]$$

$$x-2 \geq 0 \quad [x \geq 2]$$

$$\sqrt{x-1} \leq \sqrt{x-2} \quad [x \leq 2]$$

$$x-1 \leq x-2 \quad [x \leq 1]$$

$$x-1 \leq 1 \quad [x \leq 2]$$

$$x-2 \geq 0 \quad [x \geq 2]$$

$$1 \geq x \geq 2$$

$$y = \sqrt{3-x} - \sqrt{x-1} \quad (ب)$$

$$3-x \geq 0 \quad [x \leq 3]$$

$$x-1 \geq 0 \quad [x \geq 1]$$

$$\sqrt{3-x} \leq \sqrt{x-1} \quad [x \leq 1]$$

$$3-x \leq x-1 \quad [x \geq 2]$$

$$x-1 \geq 0 \quad [x \geq 1]$$

$$1 \geq x \geq 2$$

صورت سوال درست ننویسید

الف) $y = \sqrt{4-x^2}$ $4-x^2 \geq 0$ $x^2 \leq 4$ $-\sqrt{4} \leq x \leq \sqrt{4}$

ب) $y = \sqrt{3|x|-9}$ $3|x|-9 \geq 0$ $|x| \geq 3$ $x \geq 3$ or $x \leq -3$

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الف) $y = \sqrt{\frac{|x|+1}{|x|+3}}$ $D_f = \mathbb{R} - \{-3\}$

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ب) $y = \sqrt{\frac{\sqrt{x}+1}{\sqrt{x}-3}}$ $D_f = \mathbb{R} - \{9\}$

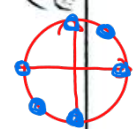
زاویه باید تعریف شود.

الف) $\frac{\cos x + 1}{\sin x + 1} \neq 0$ $\sin x \neq -1$ $D_f = \mathbb{R} - \{2k\pi + \frac{3\pi}{2}\}$

ب) $\frac{\sin x + 1}{\sin x - 1} \neq 0$ $\sin x \neq 1$ $D_f = \mathbb{R} - \{2k\pi + \frac{\pi}{2}\}$

الف) $\frac{\sin x}{\cos x - 1} \neq 0$ $\cos x \neq 1$ $D_f = \mathbb{R} - \{2k\pi\}$

ب) $\frac{\tan x + 1}{\cot x - 1} \neq 0$ $\cot x \neq 1$ $D_f = \mathbb{R} - \{2k\pi + \frac{\pi}{4}\}$



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$y = \sqrt{2|x-2| - \frac{1}{x}}$ $2|x-2| - \frac{1}{x} \geq 0$ $|x-2| \geq \frac{1}{2x}$ $x-2 > \frac{1}{2x} \rightarrow x > \frac{4}{x}$ $x-2 < -\frac{1}{2x} \rightarrow x < \frac{4}{x}$

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الف) $y = \sqrt{4-2|x|}$ $4-2|x| \geq 0$ $|x| \leq 2$ $-2 \leq x \leq 2$

ب) $y = \sqrt{\frac{|x|}{|x|}}$ $D_f = \mathbb{R} - \{0\}$

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$$\frac{(n-1)(n^2+n+1)}{n(n-1)(n+1)} \geq 0 \rightarrow$$

-1	0	*1	
+	-	+	+

أ- الف

$$D_f = (-\infty, -1) \cup (0, +\infty) - \{1\}$$

$$\frac{(n-1)(n+1)}{(n-1)(n-1)} \geq 0 \rightarrow$$

-1	1	*1	
+	-	+	+

ب- ا

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