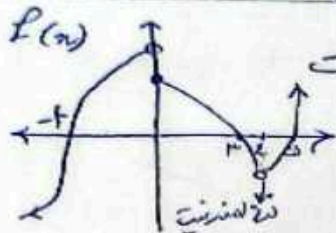


$$x = \begin{cases} y-1 & y \geq 0 \\ -y^2 & y > 1 \end{cases} \rightarrow \begin{cases} x = y-1 & y = \frac{x+1}{y} \\ y = -x & y = \sqrt{-x} \end{cases}$$

(y > 1) فقط

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$$f(x) = x^2 - 3x + 2 \quad g(x) = \frac{x f(-x+2)}{f(x)} \geq 0 \quad \frac{-x^2 - 3x + 2}{x^2 - 3x + 2} \geq 0$$

$$D_g = (-\infty, -1] \cup [0, 2] \cup [2, +\infty)$$

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$$f(x) = \frac{x^2 - 3x + 2}{x(x-1)(x+1)} \quad x(x-1)(x+1) \neq 0 \quad D_f = \mathbb{R} - \{0, \pm 1\} \quad (\text{الف})$$

$$D_{f/g} \rightarrow \frac{x^2 - 3x + 2}{x(x-1)(x+1)} \geq 0 \quad \Delta < 0 \quad \frac{-x^2 - 3x + 2}{x^2 - 3x + 2} \geq 0 \quad D = (-\infty, -1) \cup (2, +\infty)$$

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$$y = \sqrt{\frac{x+1}{x^2 - 3x + 2}} \quad \frac{x-1}{(x-1)(x+1)(x^2 + 1)} \geq 0 \quad \frac{-x}{x^2 + 1} \geq 0$$

$$D_y = (-\infty, +\infty) - \{1\} \quad (\text{الف})$$

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$$y = \frac{x+1}{x-1} \quad x \neq 1 \quad x \in (-1, 1) \quad D_y = \mathbb{R} - \{1\}$$

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$$f(x) = \frac{\sqrt{x(x-1)}}{\sqrt{|x|+2}} \quad \begin{cases} x(x-1) \geq 0 \\ |x|+2 > 0 \end{cases} \quad \Delta = [1, +\infty)$$

$$f(x) = \frac{\sqrt{|x+1|-x^2}}{|x|-1} \quad \begin{cases} (I) \quad x+1-x^2 \geq 0 \\ (II) \quad x \neq \pm 1 \end{cases} \quad \Delta = [-1, 1) - \{1\}$$

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$y = \sqrt{(x-1)(x-2)}$ $(x-1)(x-2) \geq 0 \rightarrow$ $D = \mathbb{R}$	الف) $\rightarrow$ $\begin{matrix} \text{یکسری است} \\ \text{که در همه جا تعریف می شود} \end{matrix}$	6
$y = \sqrt{ x-1 (x-2)}$ $\frac{1}{+} \frac{+}{-} \frac{+}{+} \frac{+}{+}$ $D = \mathbb{R} - (1, 2)$	ب)	6
$y = \frac{1}{ (x-1)-1 -k}$ $ (x-1)-1 -k \neq 0 \rightarrow (x-1)-1 = k$ $\rightarrow (x-1)-1 = -k$	ج)	7
$f(x) = \frac{x^2+x+1}{x^2+x+2}$ $\frac{x+1}{x-1} \neq 0 \rightarrow x \neq \pm 1$ $x^2+x+2 \neq 0 \rightarrow x \neq -1$ $D_f = \mathbb{R} - \{-1, 1\} \rightarrow x \neq$	د)	8
$y = \log \log x$ $(I) x > 0 \rightarrow x \neq 1$ $(II) x+1 > 0 \rightarrow x+1 \neq 1$ $(III) \log x > 0 \rightarrow 0 < x < 1$	ه)	9
$f(x) \quad x \in [-\omega, \omega]$ $-\omega \leq x^2-1 \leq \omega$ $f(x^2-1) \Rightarrow -\varepsilon \leq x^2 \leq \varepsilon$ $\frac{\varepsilon}{\omega} \leq x^2 \leq \frac{\varepsilon}{\omega} \rightarrow x \in \left[\frac{\sqrt{\varepsilon}}{\sqrt{\omega}}, \frac{\sqrt{\varepsilon}}{\sqrt{\omega}} \right]$	و)	10