

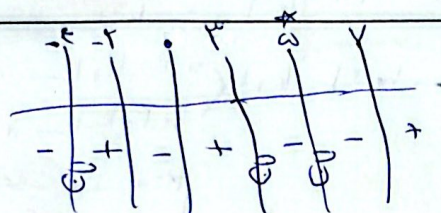
$$\begin{cases} x = y - 1 \rightarrow y = x + 1 \rightarrow y = \frac{x+1}{3} \\ x = -y^2 \rightarrow y^2 = -x \rightarrow y = \pm\sqrt{-x} \end{cases}$$

$$x < 1 \rightarrow x < 1$$

(۲)

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$$g(x) = \frac{x f(x-2)}{f(x)}$$



$$D_g = (-4, -2) \cup [0, 2) \cup [6, +\infty)$$

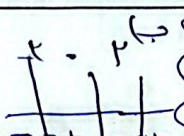
فقط حواصی باشد که $x=4$ در دامنه f و $x=2$ در دامنه f نیست که در بازه است آفده نیستند

(۲)

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$$\frac{x^2 - 2x + 2}{x^2 - 4x}$$

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$$x(x-2)(x+2) \neq 0 \quad D_f = \mathbb{R} - \{0, 2, -2\}$$

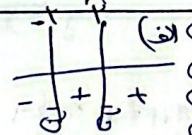
$$D_g = (-2, 0) \cup (2, +\infty)$$

(۲)

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$$\sqrt{\frac{x-2}{x^2-2x-1}}$$

$$\frac{x-2}{x^2-2x-1}$$



$$x-2 \in \mathbb{R} \rightarrow x \neq 2$$

$$x^2-2x-1 \neq 0 \rightarrow x \neq 1 \pm \sqrt{2}$$

$$D_g = \mathbb{R} - \{2, 1+\sqrt{2}, 1-\sqrt{2}\}$$

$$D_g = (-1, 2) \cup (3, +\infty)$$

(۲)

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$$f(x) = \frac{\sqrt{|x-1|-x^2}}{|x-1|}$$

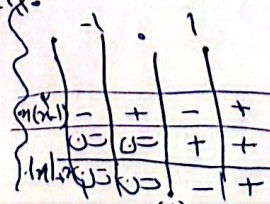
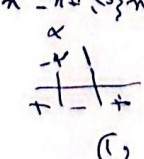
$$x^2 - x + 1 \leq 0$$

$$f(x) = \frac{\sqrt{x(x-1)}}{\sqrt{|x-1|+x}}$$

$$|x|+x \geq 0 \rightarrow |x| \geq -x$$

$$|x|+x \neq 0 \rightarrow |x| \neq -x$$

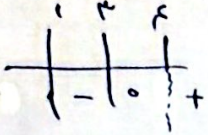
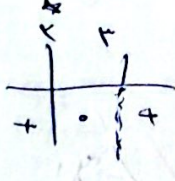
$$D_f = [1, 2) \cup \{1\}$$



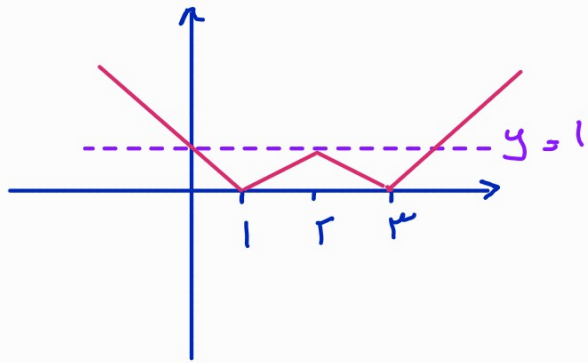
$$D_{f(x)} = [1, +\infty)$$

(۲)

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$y = \sqrt{x-1} [x+3]$  $D = [3, +\infty) \cup \{1\}$ $D_p = [3, +\infty) \cup \{1\}$	(ب) $y = \sqrt{x+2} [x-2]$  $[x-2] = 0$ $[x+2] = -2$ $x \in \mathbb{R}$ $D = \mathbb{R}$	(الف) 1, 7, 8
$ x+1 -1 = k \Rightarrow \begin{cases} x+1 -1 = k \rightarrow x+1 = k+1 \\ x+1 -1 = -k \rightarrow x+1 = -k+1 \end{cases}$ $k+3 = -k+1 \rightarrow 2k = -2 \rightarrow k = -1$ $k+3 = -k+3 \rightarrow 2k = 0 \rightarrow k = 0$ $k+1 = -k+1 \rightarrow 2k = 0 \rightarrow k = 0$ $k+1 = -k+3 \rightarrow 2k = 2 \rightarrow k = 1$	$x+1 = k+1 \rightarrow x = k$ $x+1 = -k+1 \rightarrow x = -k$ $x+1 = k+1 \rightarrow x = k$ $x+1 = -k+1 \rightarrow x = -k$ $k=0 \rightarrow x=0$ $k=1 \rightarrow x=1$ $k=1 \rightarrow x=-1$ این مدل سوال با رسم شکل خیر راحت تره صفحه 3 افرد...	6
$f(x) = \frac{x^2 + x + 2}{x^2 + x + 1}$ $\frac{x^2 + x + 2}{x^2 + x + 1} = \frac{x+1}{x-1}$ $x^2 + x + 2 = (x+1)(x-1)$ $x^2 + x + 2 = x^2 - 1$ $2x + 3 = 0 \rightarrow x = -\frac{3}{2}$	$x^2 + x + 2 \neq 0 \quad x \neq -1, -2$ $\frac{x+1}{x-1} \neq 0 \quad x \neq -1$ $x \neq -1, -2$ $x \neq -1, -2$	7
$y = \log \log \frac{1}{x}$ $\log \frac{1}{x} > 0 \rightarrow x < 1$ $\log \log \frac{1}{x} > 0 \rightarrow \log \frac{1}{x} > 1 \rightarrow \frac{1}{x} > 10 \rightarrow x < \frac{1}{10}$	$\log \frac{1}{x} > 0 \rightarrow x < 1$ $\log \log \frac{1}{x} > 0 \rightarrow \log \frac{1}{x} > 1 \rightarrow \frac{1}{x} > 10 \rightarrow x < \frac{1}{10}$	8
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$\frac{x^2}{x^2-1} < \frac{1}{x} \rightarrow \frac{x^2}{x^2-1} < \frac{1}{x} \rightarrow \frac{x^3}{x^2-1} < 1 \rightarrow x^3 < x^2-1$ $\frac{x^3}{x^2-1} < 1 \rightarrow x^3 < x^2-1$	$\frac{x^3}{x^2-1} < 1 \rightarrow x^3 < x^2-1$	10

$$||x-2|-1| = k \rightarrow \text{۳ ریشه دارد}$$



شکل تابع را با حفظ قاعه مرتب می کنیم :

چون ۳ نقطه برخورد دارند پس $k = 1$ بوده!