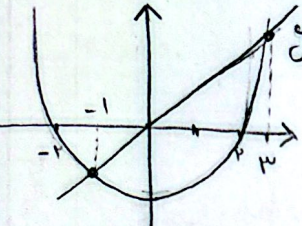
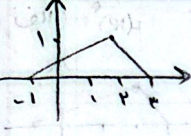
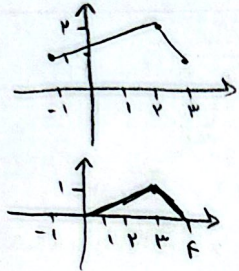
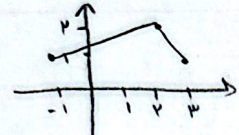
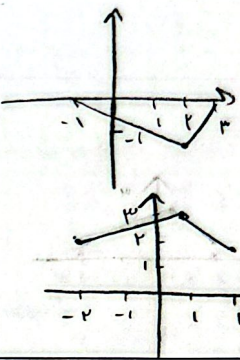


الف) $y = \frac{x+4}{4x^3 - 20x^2 + 25x - 12} \neq 0$ $\hookrightarrow$ به نفعی می‌رسد $\Rightarrow (x-1)(4x^2 - 14x + 12) = (x-1)(2x-3)(2x-4) \neq 0$ $D_f = \mathbb{R} - \left\{1, \frac{3}{2}, 2\right\}$	ب) $y = \frac{x+3}{3x^3 - x^2 - 11x - 6} \neq 0$ $\hookrightarrow$ به نفعی می‌رسد $\Rightarrow (x+1)(3x^2 - 4x - 6) = (x+1)(3x+2)(x-3)$ $\hookrightarrow x = \frac{4 \pm \sqrt{44}}{4} = \frac{1}{2}, -\frac{2}{3}$ $D_f = \mathbb{R} - \left\{-1, -\frac{2}{3}, 3\right\}$
الف) $y = \frac{x+1}{x - \sqrt{3-2x}}$ $3-2x \geq 0 \Rightarrow x \leq \frac{3}{2}$ $x - \sqrt{3-2x} \neq 0 \Rightarrow x \neq \sqrt{3-2x}$ <i>خرج صفری شود</i> $\Rightarrow x^2 = 3-2x \Rightarrow x^2 + 2x - 3 = 0 \Rightarrow (x+3)(x-1) = 0$ $D_f = (-\infty, \frac{3}{2}] - \{1\}$	ب) $y = \frac{x+2}{x - \sqrt{3x-2}}$ $3x-2 \geq 0 \Rightarrow x \geq \frac{2}{3}$ $x - \sqrt{3x-2} \neq 0 \Rightarrow x \neq \sqrt{3x-2}$ <i>خرج صفری شود</i> $\Rightarrow x^2 = 3x-2 \Rightarrow x^2 - 3x + 2 = 0 \Rightarrow (x-1)(x-2) = 0$ $D_f = [\frac{2}{3}, +\infty) - \{1, 2\}$
الف) $y = \sqrt{\frac{x^2 - 4x + 3}{x^3 - 1}}$ $x^3 - 1 \neq 0 \Rightarrow x \neq 1$ $\frac{x^2 - 4x + 3}{x^3 - 1} \geq 0 \Rightarrow \frac{(x-1)(x-3)}{(x-1)(x^2 + x + 1)} \geq 0$ $D_f = [3, +\infty)$	ب) $y = \sqrt{\frac{x^2 - 4x + 3}{x^3 - 1}}$ <i>خرج ۳ عددی ندارد</i> $x^3 - 1 \neq 0 \Rightarrow x \neq \pm 1$ $D_f = \mathbb{R} - \{-1, +1\}$
الف) $y = \log(x^2 - 3x)$ $x^2 - 3x > 0 \Rightarrow x(x-3) > 0$ $D_f = (-\infty, 0) \cup (3, +\infty)$	ج) $y = \log \frac{x^2 - \sqrt{x} + 1}{x-3}$ $10 - x > 0 \Rightarrow x < 10, x \neq 9$ $\frac{(x-3)(x-4)}{x-3} > 0 \Rightarrow x > 4$ $D_f = (4, 10) - \{9\}$
ب) $y = \log \frac{14-x^2}{ x -2}$ $14-x^2 > 0 \Rightarrow -4 < x < 4$ $x -2 > 0 \Rightarrow x > 2 \text{ یا } x < -2, x -2 \neq 1 \Rightarrow x \neq \pm 3$ $D_f = (-4, -2) \cup (2, 4) - \{-3, 3\}$	د) $y = \sqrt{x^2 - 11x + 28} + \log \sqrt{4-x^2}$ $4-x^2 > 0 \Rightarrow -2 < x < 2 \Rightarrow x \neq 0, \pm 1$ $D_f = (-2, 2) \cup (2, +\infty)$
$y = \frac{x^2 - x}{x^2 + x} \Rightarrow \frac{x(x-1)}{x(x+1)}$	ه) $y = \frac{x^2 - x}{x^2 + x} \Rightarrow \frac{x(x-1)}{x(x+1)}$

$y = \sqrt{\frac{x-f(x)}{f(x)}} \Rightarrow \frac{x-f(x)}{f(x)} \geq 0, f(x) \neq 0 \Rightarrow x-f(x)=0 \Rightarrow x=f(x)$ 	<table style="margin-left: auto; margin-right: auto;"> <tr> <td>-2</td> <td>-1</td> <td>2</td> <td>3</td> </tr> <tr> <td>-</td> <td>+</td> <td>-</td> <td>+</td> </tr> </table> $D_f = (-2, -1] \cup (2, 3]$	-2	-1	2	3	-	+	-	+
-2	-1	2	3						
-	+	-	+						
أ) $f(x)+1$  ب) $f(x-1)$  ج) $f(x)$  د) $f(x+1)+2$ 	7								
$\begin{cases} f(x) = \sqrt{x^2-2x} \Rightarrow x^2-2x \geq 0 \Rightarrow x(x-2) \geq 0 \\ g(x) = \sqrt{x}\sqrt{x^2-2} \end{cases}$ $x \geq 0 \Rightarrow x^2-2 \geq 0 \Rightarrow x^2 \geq 2 \Rightarrow x \geq \sqrt{2} \text{ or } x \leq -\sqrt{2}$ $D_f = [-\sqrt{2}, 0] \cup [\sqrt{2}, +\infty)$ $D_g = [\sqrt{2}, +\infty)$ $D_f \neq D_g$	<table style="margin-left: auto; margin-right: auto;"> <tr> <td>$-\sqrt{2}$</td> <td>0</td> <td>$+\sqrt{2}$</td> </tr> <tr> <td>-</td> <td>+</td> <td>-</td> </tr> </table> 8	$-\sqrt{2}$	0	$+\sqrt{2}$	-	+	-		
$-\sqrt{2}$	0	$+\sqrt{2}$							
-	+	-							
$\begin{cases} f(x) = [\sqrt{x} - \lfloor \sqrt{x} \rfloor] \Rightarrow 0 \leq \sqrt{x} - \lfloor \sqrt{x} \rfloor < 1 \Rightarrow D_f = [0, +\infty) \\ g(x) = \sqrt{x- x } \geq 0 \Rightarrow x \leq x \end{cases}$ $x \geq 0$ $D_g = [0, +\infty)$ $D_f = D_g$	9								
أ) $\begin{cases} f(x) = \sqrt{x x } \Rightarrow D_f = [0, +\infty) \\ g(x) = x \Rightarrow D_g = \mathbb{R} \end{cases}$ $D_f \neq D_g$ ب) $\begin{cases} f(x) = \frac{x}{ x } \Rightarrow D_f = \mathbb{R} - \{0\} \\ g(x) = \frac{ x }{x} \Rightarrow D_g = \mathbb{R} - \{0\} \end{cases}$ $D_f = D_g$	10								