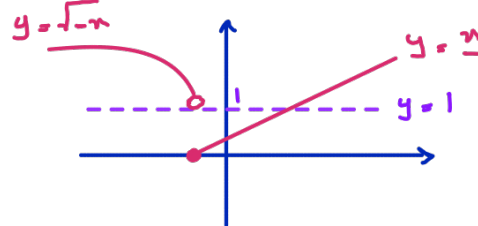
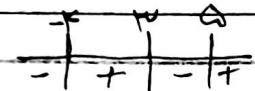
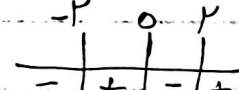


تابع است ✓ $\Rightarrow$ به ازای هر x دقیقاً یک y داریم $\left\{ \begin{array}{l} x > -1 \\ x = -y^2 < -1 \end{array} \right\}$
 به راه حل کامل بنویس
 $y = \int \frac{x+1}{x} \quad y \geq 0$
 $y = \int \sqrt{-x} \quad y > 1$


$f(x) \neq 0$ و $\frac{x f(x-2)}{f(x)} \geq 0$
 $\Rightarrow D_g = (-4, -2] \cup [0, 3) \cup (4, +\infty)$ ✓


فقط عوض باشد که $x=4$ در دایره است و $x=4$ در دایره $(x-2)$ نیست که در بازه است آفرده نیست

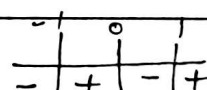
الف) $\Rightarrow x^3 - 4x \neq 0 \Rightarrow x(x-2)(x+2) \neq 0 \Rightarrow D_f = \mathbb{R} - \{0, 2, -2\}$ ✓

خرج نباید منفی باشد $\Rightarrow a > 0$ و $\Delta < 0 \Rightarrow -16 = -4 \Rightarrow x^2 - 16 = 0$ صورت ب


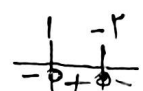
$\Rightarrow D_{f(x)} = (-2, 0) \cup (2, +\infty)$ ✓

الف) $\xrightarrow{\text{مخرج}} (x-2)(x+2)(x^2+2) \quad \Rightarrow D = (-2, 2) \cup (2, +\infty)$ ✓


ب) $4 - 2[-x] \neq 0 \Rightarrow [-x] \neq 2 \Rightarrow D = (-\infty, -3] \cup (-2, +\infty)$ ✓

الف) $|x| + x > 0 \Rightarrow x > 0$ و $x(x-1)(x+1) \geq 0$


$\Rightarrow D = [1, +\infty)$ ✓

ب) $\frac{x-2}{x} < 0 \rightarrow -x^2 - x + 2 \rightarrow \frac{1}{x} - 2 \quad \text{و} \quad |x| - 1 \neq 0 \Rightarrow D = [-2, -1) \cup (-1, 1)$ ✓


$\xrightarrow{x=0} -x^2 + x - 2 \rightarrow$ همیشه منفی ✗

$\text{الف)} \Rightarrow (x-2)^2 \geq 0 \Rightarrow D = \mathbb{R} \checkmark$ $\text{ب)} x-1 (x-3) \geq 0 \quad \frac{1}{-} \frac{1}{-} \frac{3}{+} \Rightarrow D = \{1\} \cup [3, +\infty) \checkmark$	(2) 6
$\Rightarrow x-2 ^{-1} = \pm K \Rightarrow x = 2 \pm (K+1) \leq x = 2 \pm (1-K)$ $K=1 \Rightarrow x=0, 2, 4 \Rightarrow K=1 \checkmark$	(2) 7
$\left. \begin{aligned} x^2 + 3x + 2 \neq 0 &\Rightarrow (x+1)(x+2) \neq 0 \\ x+1 \neq 0 &\Rightarrow x \neq -1, \quad x-1 \neq 0 \Rightarrow x \neq 1 \end{aligned} \right\} n=3 \checkmark$ $x^2 - 2(3)x + 3(3) = 0 \Rightarrow x^2 - 6x + 9 = 0 \Rightarrow (x-3)^2 = 0 \rightarrow \frac{0}{0} \checkmark$	(2) 8
$\log_x \frac{1}{x} \Rightarrow x > 0, x \neq 1 \text{ ①} \quad \log_x \frac{1}{x} > 0 \Rightarrow 0 < x < 1 \text{ ②}$ $x+1 > 0, x+1 \neq 1 \text{ ③} \quad \xrightarrow{\text{①, ②, ③}} D_f = (0, 1) \checkmark$	(2) 9
$D_f = [-5, 3] \Rightarrow -5 \leq 3x^2 - 1 \leq 3 \quad \text{سمت چپ بزرگتر است}$ $3x^2 - 1 \leq 3 \Rightarrow x^2 \leq \frac{4}{3} \Rightarrow -\frac{2}{\sqrt{3}} \leq x \leq \frac{2}{\sqrt{3}}$ $D = \left[-\frac{2}{\sqrt{3}}, \frac{2}{\sqrt{3}} \right] \checkmark$	(2) 10