

در رشته به ازای $y = \sqrt{2x^2 + 2x - 1}$ $y^2 = 2x^2 + 2x - 1$ (الف)
 معرجه آلمن می‌توانیم استفاده کنیم $x = \frac{p}{q} \rightarrow \frac{p}{q} \cos x = \dots \rightarrow y = K\pi \pm \frac{p}{q}$ (ب)
 $x \cos y = y \cos x \xrightarrow{\text{توان دو}} x^2 + y^2 - 2xy = 0 \rightarrow (x - y)^2 = 0 \rightarrow x = y$ (ج)
 $\frac{x+y}{2} = \sqrt{xy} \xrightarrow{\text{توان دو}} x^2 + y^2 - 2xy = 0 \rightarrow (x - y)^2 = 0 \rightarrow x = y$ (د)
 $x^2 + 2x - y^2 - 2y = 0 \rightarrow y^2 + 2y - x^2 - 2x = 0 \rightarrow (y+1)^2 - (x+1)^2 = 0 \rightarrow (y+1-x-1)(y+1+x+1) = 0$
 $x = -1 \rightarrow |x-1| = 2 \rightarrow \dots$

$x = -1 \rightarrow -2 + a$
 $\rightarrow -2 + a = 2 - b \rightarrow \boxed{a + b = 4}$

a و b $\rightarrow$ $b \pm \sqrt{b^2 + 4a} = \dots$

$\rightarrow x^2 - bx + a \rightarrow S = -b, P = -a$
 $\rightarrow b + a = -b \rightarrow b = -1, a = 2$
 $\rightarrow ab = -a \rightarrow \boxed{a + b = -1 + 2 = 1}$

دامنه تابع همان دامنه زیرادکال است $\rightarrow Df = (-\infty, 2) \rightarrow$ چون بازه است عبارت زیرادکال در صید است $\rightarrow a = 0$
 $\rightarrow 2b + c = 0 \rightarrow c = -2b$
 $\rightarrow 3a + c - 3|b| \rightarrow -2b - 3b = \boxed{-5b}$

(الف) $\sqrt{\frac{1}{|x| - [x]}}$ $\rightarrow |x| - [x] \neq 0$
 $Df = \{R - Z^+\}$
 $\rightarrow \sqrt{x} + \sqrt{y} = a$
 $Df = [0, 1]$

الف) $f(x) = \sqrt{\log_x^{x-1}}$ $\left. \begin{array}{l} x > 0 \\ x \neq 1 \\ x > \frac{1}{x} \end{array} \right\} \cap \log_x^{x-1} \geq \log_x^1$

$\rightarrow \boxed{x \geq \frac{2}{x}}$

$\rightarrow DF = [\frac{2}{x}, +\infty) \setminus \{1\}$

ب) $f(x) = \frac{1}{x + \sqrt{x^2 - 1}}$ $\rightarrow \frac{1}{x + \sqrt{x^2 - 1}}$ $\rightarrow -t^2 + t + 6 \neq 0$

$\rightarrow t = 3, -2$

$\rightarrow \sqrt{x^2 - 1} \leq 2$ $\rightarrow -2 \leq x \leq 2$

$\rightarrow \boxed{DF = [-2, 2]}$

$\frac{x+2}{x+6} + a \geq 0 \rightarrow x(x+a) + 2x+6 \geq 0$

$x+a \neq 0 \rightarrow \boxed{a = -3}$

رابطه تمایز داریاد
پس فرضیه a صفر است

$y = \sqrt{\frac{x-2}{x+6}}$

$x = 2 \rightarrow x+6 = 0 \rightarrow \boxed{b = -2}$

$f(x) = \begin{cases} 2x-1, & x \geq 0 \\ 2x+3, & x < 0 \end{cases}$

$x \geq 0 \rightarrow \sqrt{2x-1} - x+1 \rightarrow DF = [0, +\infty)$

$x < 0 \rightarrow \sqrt{2x+3} - x+1 \rightarrow D = [-\frac{3}{2}, 0)$

$\rightarrow DF = [-\frac{3}{2}, +\infty)$

$y = \frac{2(x+1)^2}{(x+1)^2} = 2(x+1) = \boxed{4x+3}$

$DF = \mathbb{R} - \{\frac{1}{2}\}$

$(2x+1) \neq 0 \rightarrow \boxed{x \neq -\frac{1}{2}}$

$DF = [b, c] \rightarrow \begin{array}{l} b \text{ مخرج کسره} \\ 2b - a = 0 \\ 2c - a = 1 \end{array}$

$\rightarrow 2c - 2b = 1 \rightarrow \boxed{c - b = \frac{1}{2}}$