

$$y = \frac{x+3}{2x^2 + 3x^2 - 11x + 3}$$

$$= \frac{1}{(x-1)(x+3)(x-\frac{1}{2})}$$

$$2x^2 + 3x^2 - 11x + 3 = 0 \Rightarrow x^2 + 3x - 4 = 0$$

$$\div 2$$

$$(x+4)(x-1) = 0$$

$$\downarrow \quad \downarrow$$

$$\frac{-4}{2} = -2 \quad \frac{1}{2}$$

$$\frac{2x^2 + 3x^2 - 11x + 3}{2x^2 + 3x^2 - 11x + 3} \cdot \frac{x-1}{x-1}$$

$$2x^2 - 11x$$

$$2x^2 - 11x$$

$$-2x^2 + 3x$$

$$-2x^2 + 3x$$

$$x+3=0$$

$$x+3=0$$

$$x = -3$$

$$Df = IR - \{-3, \frac{1}{2}, 1\}$$

$$y = \frac{x+3}{2x^2 + 9x^2 + 11x + 3}$$

$$2x^2 + 9x^2 + 11x + 3 = 0 \Rightarrow x^2 + 3x + 4 = 0$$

$$\div 2$$

$$(x+4)(x+1)$$

$$\downarrow \quad \downarrow$$

$$\frac{-4}{2} = -2 \quad \frac{-1}{2}$$

$$x+1=0$$

$$\Rightarrow x = -1$$

$$Df = IR - \{-2, -\frac{1}{2}, -1\}$$

$$y = \frac{x+3}{x^2 - 2x^2 + 2x - 1}$$

$$(x-1)(x^2 - 2x + 1)$$

$$\Delta = b^2 - 4ac$$

$$= (-1)^2 - 2 \times 1 \times 1 = -1$$

$$Df = IR - \{1\}$$

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

$$-x^2 + 2x$$

$$-x^2 + 2x$$

$$x-1$$

$$x-1$$

$$x-1$$

الف) $y = \frac{x+2}{|2x+1| - |x+3|}$

(ع)

$|2x+1| - |x+3| \neq 0 \Rightarrow (2x+1)^2 \neq (x+3)^2$

$4x^2 + 4x + 1 \neq x^2 + 6x + 9$
 $3x^2 - 2x - 8 \neq 0$

$\div 3$

$x^2 - 2x - 8 \neq 0$

$(x-4)(x+2) \neq 0$

$\downarrow \quad \downarrow$
 $\frac{x}{3} = 4 \quad \frac{-x}{3} = 2$

$D_f = \mathbb{R} - \left\{ 4, -\frac{2}{3} \right\}$

ب) $y = \sqrt{|2x+1| - |x+3|}$

$\Rightarrow |2x+1| = |x+3| \Rightarrow x = 2 \text{ or } x = -\frac{2}{3}$

$\frac{-2}{3} \quad 2$
 $+$ $-$ $+$

$D_f = (-\infty, -\frac{2}{3}]$

$\cup [2, +\infty)$

الف) $y = \log_r(1 - \log_r x)$

ملاحظة

(د)

$1 - \log_r x > 0$

$1 > \log_r x$

$x < r$

$x > 0$

$D_f = (0, r)$

$$1) y = \log_r \left(1 - \log_{\frac{1}{r}} x \right) \quad x > 0$$

$$1 - \log_{\frac{1}{r}} x > 0$$

$$1 < \log_{\frac{1}{r}} x$$

$$\frac{1}{r} < x$$

$\cap$

$$D_f = \left(\frac{1}{r}, +\infty \right)$$

المجال (4)

$$f(x) = \sqrt{\log_{\frac{1}{r}} \log_{\frac{1}{r}} (x-1)}$$

$$x-1 > 0$$

$$x-1 > 1 \Rightarrow \boxed{x > 2}$$

$$\log_{\frac{1}{r}} (x-1) > 0 \Rightarrow$$

$$x-1 > 1 \Rightarrow x-1 > r \Rightarrow \boxed{x > r+1}$$

$$\log_{\frac{1}{r}} \log_{\frac{1}{r}} (x-1) > 0$$

$$\log_{\frac{1}{r}} (x-1) > 1$$

$$\Rightarrow \log_{\frac{1}{r}} (x-1) \leq 1 \Rightarrow x-1 \leq r$$

$$x \leq r+1 \Rightarrow \boxed{x \leq r+1}$$

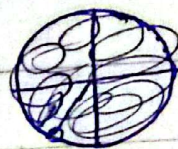
$$\cap \quad D_f = (1, r+1]$$

(5)

$$2) y = \log(r \cos x + 1)$$

$$r \cos x + 1 > 0 \Rightarrow r \cos x > -1$$

$$\cos x > -\frac{1}{r}$$



① ضمیمه صبیح در (مفید) $f(x) = \frac{\sqrt{x^2 - 1}}{[x] + [-x] + 1}$ قرار دارد

$$[x] + [-x] + 1 \Rightarrow 1 \quad x \in \mathbb{Z}$$

$$\Downarrow 0 \quad x \notin \mathbb{Z}$$

تعریف نشده

$$x^2 - 1 \geq 0$$

$$(x+1)(x-1) \geq 0$$

$$\downarrow \quad \downarrow$$

$$-1 \quad 1$$

$$\frac{-1}{-1} + \frac{1}{1} = -$$

$$Df = \{-2, -1, 0, 1, 2\}$$

«مجموعه صبیح»

④ $Df = \mathbb{R} \quad f(x) = \sqrt{x^2 + 2x + 2 - m^2}$

سقف مقدار m - کف مقدار m $\Downarrow$ یعنی در همه مقادیر دارد

$$x^2 + 2x + 2 - m^2 = 0$$

$$(x+1)^2 = x^2 + 2x + 1$$

$$2 - m^2 = 1$$

$$\Rightarrow 1 - m^2 = 0$$

$$m = -1$$

$$m = 1$$

$$(1+m)(1-m) = 0$$

$$1 - (-1) = \boxed{2}$$