

الف) $y = \frac{x+3 \rightarrow -3}{(x-1)(x+2)(2x-1)}$ $D_f = \mathbb{R} - \{-3, \frac{1}{2}, 1\}$

ب) $y = \frac{x+3 \rightarrow -3}{(x+1)(x+2)(2x+1)}$ $D_f = \mathbb{R} - \{-3, -1, -\frac{1}{2}\}$

الف) $y = \frac{x+3 \rightarrow -3}{(x-1)(x^2-x+1)}$ $D_f = \mathbb{R} - \{1\}$

ب) $y = \frac{x+3 \rightarrow -3}{(x-1)(x^2-x+1)} \geq 0 \Rightarrow \frac{-3}{+ \phi - \phi +} D_f = (-\infty, -3] \cup (1, +\infty)$

الف) $y = \frac{2}{x^2 - 5|x-1| - 2x + 5}$ $\begin{cases} x^2 - 5x + 10 & x \geq 1 \\ x^2 + 3x & x < 1 \end{cases}$ $D_f = \mathbb{R} - \{-5, 0, 2\}$

الف) $y = \frac{x+2}{|2x+1| - |x+3|} \neq 0 \Rightarrow (|2x+1| \neq |x+3|) \Rightarrow 2x^2 + 5x + 1 \neq x^2 + 6x + 9$
 $\Rightarrow y = \frac{|2x+1| - |x+3|}{|2x+1| - |x+3|} \geq 0 \Rightarrow (2x+1)^2 \geq (x+3)^2$
 $(x-2)(2x+5) \geq 0 \Rightarrow \frac{-5}{+ \phi - \phi +}$
 $D_f = (-\infty, -\frac{5}{2}] \cup [2, +\infty)$
 $2x^2 - 2x - 8 \neq 0 \Rightarrow D_f = \mathbb{R} - \{-\frac{5}{2}, 2\}$
 $(x-2)(2x+5) \neq 0 \Rightarrow x \neq 2 \quad x \neq -\frac{5}{2}$

الف) $y = \log_{\frac{1}{2}}(1 - \log_{\frac{1}{2}} x)$ $1 - \log_{\frac{1}{2}} x > 0 \Rightarrow \log_{\frac{1}{2}} x < 1 \Rightarrow x < 2$ $D_f = (0, 2)$

ب) $y = \log_{\frac{1}{2}}(1 - \log_{\frac{1}{2}} x)$ $1 - \log_{\frac{1}{2}} x > 0 \Rightarrow \log_{\frac{1}{2}} x < 1 \Rightarrow x > \frac{1}{2}$ $D_f = (\frac{1}{2}, +\infty)$

$$f(x) = \sqrt{\log_2 \log_2^{(x-1)} \frac{1}{x}}$$

$$x_{n-1} > 0 \quad x > \frac{1}{x}$$

$$\log_2^{(x-1)} > 0 \quad x_{n-1} > 1 \quad x > 1$$

$$\log_2 \log_2^{(x-1)} \geq 0 \Rightarrow \log_2^{(x-1)} \leq 1 \Rightarrow x_{n-1} \leq 8 \quad x \leq 2$$

$$D_f = (1, 2]$$

$$الف) y = \log(x \cos x + 1)$$

$$x \cos x + 1 > 0 \quad \cos x > -\frac{1}{x}$$

$$\hookrightarrow D_f = \left[\frac{1}{x} - 1, \frac{1}{x} + 1 \right]$$



$$D_f = \mathbb{R} - \left[\frac{1}{x} - 1, \frac{1}{x} + 1 \right]$$

$$ب) y = \sqrt{\log \frac{x-1}{x+1}}$$

$$\frac{x-1}{x+1} > 0 \quad +\frac{1}{x} - 1 \quad (-\infty, -1) \cup (1, +\infty)$$

$$\} \Delta \Rightarrow \begin{cases} (-\infty, -1) \\ (1, +\infty) \end{cases}$$

$$\log \frac{x-1}{x+1} \geq 0 \quad \frac{x-1}{x+1} \geq 1 \quad \frac{x-1-x-1}{x+1} \geq 0 \quad \frac{-2}{x+1} \geq 0 \quad +\frac{1}{x} - 1 \quad (-\infty, -1)$$

$$f(x) = \sqrt{(a+x)x^2 + ax + b}$$

$$(-\infty, 2] \quad \text{مکزیسم}$$

الرمضاعف باسد...

$$m, n \rightarrow m(n-2)^2 = (n^2 - 4n + 4)m = (a+x)n^2 + an + b$$

$$n = a+x \rightarrow (a+x)n^2 - 4(a+x)n + 4(a+x) = (a+x)n^2 + an + b$$

$$-4(a+x) = a$$

$$-4a - 4x = a \rightarrow a = -\frac{4x}{5} \quad b = 4(a+x) = \frac{4}{5}a$$

$$\Rightarrow \begin{cases} a+x=0 \\ a=-x \end{cases}$$

$$\rightarrow -x + b = 0 \rightarrow -x + b = 0 \quad b = x$$

$$f(x) = \sqrt{x^2 + (n+x-m)^2}$$

$$D_f \neq \mathbb{R}$$

$$\Delta \leq 0 \quad \text{عبارة}$$

$$f(1)(2-m^2) \leq 0$$

$$-\epsilon + \epsilon m^2 \leq 0 \quad m^2 - 1 \leq 0$$

$$-1 \leq m \leq 1$$

$$1 - (-1) = 2$$

$$f(x) = \frac{\sqrt{\epsilon - x^2}}{[x] + [x] + 1}$$

عدد صحیح از بهر آنت خارج می شود

پس مجموع بهر آن اعداد صحیح!

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

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

$$-2, -1, 0, 1, 2$$

$$x^2 \leq \epsilon \quad -\sqrt{\epsilon} \leq x \leq \sqrt{\epsilon}$$

$$\epsilon$$