

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

$$9a - 11 + 3a + b = 0 \rightarrow 12a + b + 11 = 0 \quad \Delta = 0 \rightarrow a^2 - 4b(a-x) = 0$$

$$\Rightarrow a^2 - 4(a-x)(11-12a) = 0 \quad b = -12a + 11 \quad b = -12 \times \frac{11}{4} = -11 \Rightarrow$$

$$= 0 \Rightarrow (12a-12)^2 = 0 \quad \text{عبارت باید خط باشد} \quad b = \frac{12a-11}{4} \quad \text{مثال های خنده!}$$

$$\Rightarrow a = \frac{12}{4} \quad b = -\frac{11}{4}$$

$$f(x) = \sqrt{x^2 + 2x + 2 - m^2} \quad x^2 + 2x + 2 - m^2 \geq 0$$

$$\Delta \leq 0 \quad 4 - 4(2 - m^2) \leq 0 \rightarrow 4 - 8 + 4m^2 \leq 0 \rightarrow 4m^2 - 4 \leq 0$$

$$-1 \leq m \leq 1 \rightarrow 1 - (-1) = 2 \quad \text{پ}$$

$$f(x) = \sqrt{f - x^2} \quad f - x^2 \geq 0 \rightarrow x^2 \leq f \rightarrow -\sqrt{f} \leq x \leq \sqrt{f}$$

$$[x] + [-x] + 1 \quad [x] + [-x] + 1 \neq 0$$

$$D_f = [-\sqrt{f}, \sqrt{f}] \rightarrow \text{پ}$$

$$\text{الف) } \sqrt{x^3 + 3x^2} \rightarrow x^3 + 3x^2 \geq 0 \rightarrow x^2(x+3) \geq 0 \quad \frac{-3}{-1+0+1}$$

$$\text{ب) } \sqrt{\frac{(x^3-1)(x^3-3x^2)}{x^3-1}} = \frac{(x^3-1)x^2(x-3)}{(x-1)(x^2+x+1)} \geq 0$$

$$D_f = [-\infty, -1] \cup [3, +\infty) \quad \text{پ}$$

$$\text{الف) } \sqrt{|x-2|} \geq 3 \rightarrow |x-2| \geq 9 \rightarrow |x-2| \geq 3$$

$$\Rightarrow \begin{cases} x-2 \geq 3 & x \geq 5 \\ x-2 \leq -3 & x \leq -1 \end{cases} \quad D_f = (-\infty, -1] \cup [5, +\infty)$$

$$\text{ب) } \sqrt{f - |x-2|} \rightarrow f - |x-2| \geq 0 \rightarrow |x-2| \leq f$$

$$\Rightarrow \begin{cases} x-2 \leq f & x \geq -2 \\ x-2 \geq -f & x \leq 2 \end{cases} \quad D_f = [-2, 2] \quad \text{پ}$$

الف) $\sqrt{1-x|x|} - 1 - x|x| \geq 0 \rightarrow \begin{cases} x \geq 0 \rightarrow 1-x^2 \geq 0 \\ x < 0 \rightarrow 1-x(-x) \geq 0 \end{cases}$

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

$1-x(-x) \geq 0 \rightarrow 1+x^2 \geq 0 \rightarrow$ همیشه درست است $\rightarrow x < 0$

$D_f = (-\infty, -1] \cup [0, 1]$

ب) $\frac{1}{\sqrt{3-|x-5|-1}} \rightarrow 3-|x-5|-1 > 0 \rightarrow 2-|x-5| > 0$ (1/20)

$\frac{3-|x-5|}{\sqrt{3-|x-5|-1}} \geq 0$ ب) $\frac{3-|x-5|}{\sqrt{3-|x-5|-1}} \geq 0$

$\sqrt{3-|x-5|-1} > 0 \rightarrow 3-|x-5|-1 > 0 \rightarrow 2-|x-5| > 0$

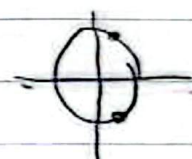
$|x-5| < 2 \rightarrow \begin{cases} x-5 < 2 \rightarrow x < 7 \\ x-5 > -2 \rightarrow x > 3 \end{cases}$

صورت سوال را اشتباه ننویس

$D_f = (3, 7)$

الف) $\frac{\sin^2 x - 1}{\cos x} \rightarrow \cos x \neq 0$  $\rightarrow V$

$D_f = R - \left\{ k\pi + \frac{\pi}{2} \right\}$

ب) $\frac{\cos x}{2\cos x - 1} \rightarrow 2\cos x - 1 \neq 0 \rightarrow \cos x \neq \frac{1}{2}$ 

$D_f = R - \left\{ 2k\pi \pm \frac{\pi}{3} \right\}$ D

الف) $\frac{x+3}{|2x+1| - |x+3|} \rightarrow |2x+1| - |x+3| \neq 0 \rightarrow$ -1

$|2x+1| \neq |x+3| \rightarrow (2x+1)^2 \neq (x+3)^2 \rightarrow 4x^2 + 4x + 1 \neq x^2 + 6x + 9 \rightarrow$

$3x^2 - 2x - 8 \neq 0 \rightarrow x^2 - 2x - \frac{8}{3} \neq 0 \rightarrow (x-4)(x+\frac{2}{3}) \neq 0$

$x \neq 4 \rightarrow x \neq -\frac{2}{3}$ $D_f = R - \left\{ -\frac{2}{3}, 4 \right\}$

ب) $\sqrt{|2x+1| - |x+3|} \rightarrow |2x+1| - |x+3| \geq 0$

$\rightarrow |2x+1| \geq |x+3| \rightarrow (2x+1)^2 \geq (x+3)^2$

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

$\frac{-(-2) \pm \sqrt{4 + 96}}{6} = \frac{2 \pm 10}{6} = \frac{12}{6} = 2 \text{ or } \frac{-8}{6} = -\frac{4}{3}$

$D_f = (-\infty, -\frac{4}{3}] \cup [2, \infty)$ D

$$f(x) = \sqrt{\log_{\omega} \log_{\omega}^{(r_{n-1})}} \quad r_{n-1} > 0 \quad x > \frac{1}{p} \quad (9)$$

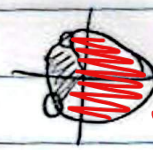
$$\log_{\frac{1}{p}} \log_{\omega}^{r_{n-1}} \geq 0 \rightarrow \log_{\omega} r_{n-1} \leq 1 \rightarrow r_{n-1} \leq \omega$$

$$r_n \leq 4 \rightarrow x \leq 3$$

$$\log_{\omega} r_{n-1} > 0 \rightarrow r_{n-1} > 1 \rightarrow r_n > 2 \rightarrow x > 1 \quad D_f = [1, 3]$$

$$f(x) = \log(r \cos x + 1)$$

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



ارتقاء!

بازمه قابل قبول!

$$D_f (rK\pi - \frac{rK}{p}, rK\pi + \frac{rK}{p})$$

شماره دست برآمده بودها ت

$$\sqrt{\log \frac{x-1}{x+1}} \quad \frac{x-1}{x+1} > 0 \quad \frac{-1}{+\frac{1}{3}-1} \quad (-\infty, -1) \cup [1, +\infty)$$

$$\log \frac{x-1}{x+1} \geq 0 \quad \frac{x-1}{x+1} \geq 1 \quad \frac{x-1-x-1}{x+1} \geq 0 \rightarrow \frac{-2}{x+1} \geq 0$$

$$\frac{-1}{+\frac{1}{3}-1} = (-\infty, -1) \quad D_f = (-\infty, -1)$$

(۱) چون دامنه تک بازه است پس عبارت نمی تواند یک سهمی باشد، باید یک خط باشد!

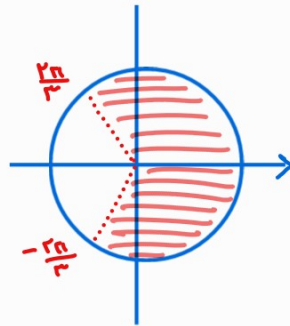
$$a - 2 = 0 \rightarrow a = 2 \rightarrow f(x) = \sqrt{2x + b} \xrightarrow{Df = [-3, +\infty)} f(3) + b = 0 \rightarrow \boxed{b = -6}$$

ب-۴ $3 - |x - 5| \geq 0 \rightarrow |x - 5| \leq 3 \rightarrow -3 \leq x - 5 \leq 3 \rightarrow 2 \leq x \leq 8$

$$\sqrt{3 - |x - 5|} - 1 \neq 0 \rightarrow \sqrt{3 - |x - 5|} \neq 1 \rightarrow 3 - |x - 5| \neq 1 \rightarrow |x - 5| \neq 2 \rightarrow x \neq 3, 7$$

$$Df = [2, 8] - \{3, 7\} = [2, 3) \cup (3, 7) \cup (7, 8]$$

الف-۱۰ $2 \cos x + 1 > 0 \rightarrow \cos x > -\frac{1}{2}$



$$\rightarrow Df = (2k\pi - \frac{\pi}{3}, 2k\pi + \frac{\pi}{3})$$