

۱. با توجه به دادن ضریب α و $\alpha = 2$ است. $P(\alpha) = \sqrt{(a-2)x^2 + \alpha x + b}$

$\sqrt{2x+b} \rightarrow \sqrt{2x^2+b} = 0 \quad \boxed{b = -2}$

۲. $f(\alpha) = \sqrt{x^2 + 2x + 2 - m^2}$ (داده $\rightarrow$ IR پس سعی کردن)

$\Delta \rightarrow \leq 0$

$4 - 4(2 - m^2) \leq 0$

$4 - 8 + 4m^2 \leq 0 \quad m^2 \leq 1$

$\boxed{-1 \leq m \leq 1}$

۳. $P(\alpha) = \frac{\sqrt{4 - \alpha^2}}{[\alpha] + [-\alpha] + 1} \rightarrow$ (IR) منفی

$4 - \alpha^2 \geq 0$

$\alpha^2 \leq 4$

$\boxed{-2 \leq \alpha \leq 2}$

۴. $D = \{x \mid -2, -1, 0, 1, 2\}$ شامل همه اعداد صحیح

۵. $y = \sqrt{x^3 + 3x^2} \rightarrow x^3 + 3x^2 \geq 0 \quad x^2(x+3) \geq 0$

$\boxed{x \geq -3}$

۶. $y = \sqrt{\frac{(x^2-1)(x^3-3x^2)}{x^3-1}}$

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

$x \in (-\infty, -1] \cup [0, 1] \cup [3, \infty)$

۷. $y = \sqrt{|x-2| - 3}$

$|x-2| \geq 3$

$|x-2| \leq -3$

$\boxed{x \geq 5}$
 $\boxed{x \leq -1}$

۸. $y = \sqrt{4 - |2-x|}$

$|2-x| \leq 4$

$-4 \leq 2-x \leq 4$

$-6 \leq -x \leq 2$

$\boxed{-2 \leq x \leq 6}$

الف) $y = \sqrt{1-x|x|}$

$x|x| \leq 1 \rightarrow x \leq 1$

صورت سوال را اشتباه نرست! $\sqrt{3-|x-a|} - 1$

ب) $y = \frac{1}{\sqrt{3-|x-a|}-1}$

$3-|x-a| \geq 0 \rightarrow |x-a| \leq 3$
 $-3 \leq x-a \leq 3$
 $3 \leq x \leq 6$

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الف) $y = \frac{\sin^2 x - 1}{\cos x}$

$\cos x \neq 0 \rightarrow x \neq \{2k\pi + \frac{\pi}{2}, 2k\pi + \frac{3\pi}{2}\}$

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

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ب) $y = \frac{\cos x}{2\cos x - 1}$

$2\cos x \neq 1$
 $\cos x \neq \frac{1}{2}$

$x \neq \{2k\pi \pm \frac{\pi}{3}\}$

$D_f = \mathbb{R} - \{2k\pi \pm \frac{\pi}{3}\}$

الف) $y = \frac{x+3}{|x+1| - |x+3|}$

$|x+1| \neq |x+3|$

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

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

ب) $y = \sqrt{|x+1| - |x+3|}$

$|x+1| \geq |x+3|$

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

$x \geq 2$
 $x \leq -\frac{2}{3}$

$f(x) = \sqrt{\log_a(\log_a(x-1))}$

$\log_a(x-1) > 0 \rightarrow x-1 > 1 \rightarrow x > 2$

$x > 2 \rightarrow x > \frac{1}{2}$

$\log_a(x-1) \leq 1 \rightarrow x-1 \leq a \rightarrow x \leq 3$

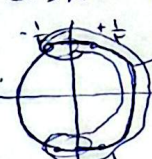
دامنه دامل توابعی نیفتاده از روی دایره منتهی نموده ایم

$D_f = [2k\pi - \frac{2\pi}{3}, 2k\pi]$

الف) $y = \log(2\cos x + 1)$

$2\cos x + 1 \geq 0$

$x \in [2k\pi + \frac{\pi}{2}, 2k\pi + \frac{3\pi}{2}] \cup [2k\pi - \frac{\pi}{2}, 2k\pi - \frac{3\pi}{2}]$

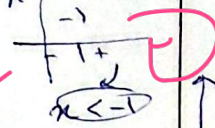


$x \leq -1$

ب) $y = \sqrt{\log \frac{x-1}{x+1}}$

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

$x < -1$



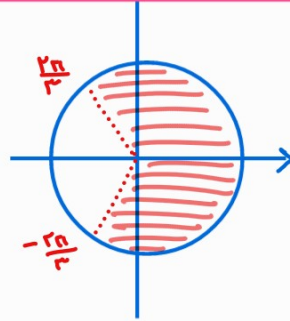
$\log \frac{x-1}{x+1} > 0 \rightarrow \frac{x-1}{x+1} > 1 \rightarrow \frac{x-1-x-1}{x+1} > 0 \rightarrow \frac{-2}{x+1} > 0 \rightarrow x < -1$

٤- ب) $3 - |u - v| \geq 0 \rightarrow |u - v| \leq 3 \rightarrow -3 \leq u - v \leq 3 \rightarrow 2 \leq u \leq 8$

$\sqrt{3 - |u - v|} - 1 \neq 0 \rightarrow \sqrt{3 - |u - v|} \neq 1 \rightarrow 3 - |u - v| \neq 2 \rightarrow |u - v| \neq 2 \rightarrow u \neq v, 3$

$D_f = [2, 8] - \{v, 3\} = [2, 3) \cup (3, v) \cup (v, 8]$

الف - ١٥) $2C \cdot \sin u + 1 > 0 \rightarrow C \cdot \sin u > -\frac{1}{2}$



$\rightarrow D_f = (2k\pi - \frac{\pi}{6}, 2k\pi + \frac{\pi}{6})$