۸) $f(x)\ \sqrt{(a+2)x^2+ax+b} \Rightarrow (-\infty\ 3]$

یک صورت

باید یک ریشه $\quad a+2=0$

اگر مضاعف بود همواره تعریف نشده بود $\quad a=-2$

$-2x+b=0$

$\cancel{-2(3)}+b=0$

$-6 \quad \hookrightarrow b=6$

۹) $f(x)=\sqrt{x^2+2x+2-m^2}$ ریشه مضاعف $\Delta=0$

$4-4(2-m^2)=0$

$4-8+4m^2 \Rightarrow 4m^2-4=0 \Rightarrow \cancel{4}(m^2-1)=0 \qquad +1-(-1)=2$

$\hookrightarrow m=\pm 1$

۱۰) $f(x)=\dfrac{\sqrt{4-x^2}}{\underbrace{[x]+[-x]}_{-1\ \text{یا}\ 0}+1} \neq 0 \Rightarrow$

	-2		2	
$-$	ϕ	$+$	ϕ	$-$

$[-2\ \ 2] \Rightarrow \{-2,-1,0,+1,2\}$

فقط عضو $\mathbb{Z}$

$\mathbb{R}-\mathbb{Z}$ ب

$\hookrightarrow \mathbb{Z}$

$I\omega$

نعمان امامی

۲۵

1) $y = \dfrac{x+3}{2x^3+3x^2-8x+3 \neq 0}$

$$\begin{array}{l|l} 2x^3+3x^2-8x+3 & x-1 \\ \hline -2x^3+2x^2 & 2x^2+5x-3 \\ 5x^2-8x & \\ -5x^2+5x & \\ -3x+3 & \end{array}$$

$\to \frac{1}{2}$

$(x-1)(x+6)$ $\quad \underbrace{\frac{1}{2}}\quad \underbrace{\frac{-6}{2}=-3}$

$\mathbb{R}-\{1, \frac{1}{2}, -3\}$

۵

$y = \dfrac{x+3}{2x^3+9x^2+10x+3}$

$$\begin{array}{l|l} 2x^3+9x^2+10x+3 & x+1 \\ \hline -2x^3-2x^2 & 2x^2+7x+3 \\ 7x^2+10x & \\ -7x^2-7x & \\ 3x+3 & \end{array}$$

$6 \to -1$

$(x+1)(x+6)$ $\quad \frac{-1}{2} \quad \frac{-6}{2}$

$\mathbb{R}-\{1, -\frac{1}{2}, -3\}$

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

$$\begin{array}{l|l} x^3-2x^2+2x-1 & x-1 \\ \hline -x^3+x^2 & x^2-x+1 \\ -x^2+2x & \\ +x^2-x & \\ x-1 & \end{array}$$

$(x\ )(\ \ )$

$\Rightarrow 1 \quad 1-4(1)<0$ ریشه ندارد

$\mathbb{R}-\{1\}$

۵

$y = \sqrt{\dfrac{x+3}{x^3-2x^2+2x-1 \neq 0}} \geq 0$ $\quad \dfrac{-3 \quad 1}{+ \ \phi \ - \ \not\phi \ +}$ $(-\infty \ -3] \cup (1 \ +\infty)$

3) $y = \dfrac{2}{x^2-5|x-1|-2x+5 \neq 0}$

$x^2+5x-5-2x+5$

$x^2+3x \Rightarrow x(x+3) \lesssim^{0}_{-3}$

x^2-2x+5

$4-4(5)$ ندارد

$x^2-5x+5-2x+5$

$x^2-7x+10$

$(x-5)(x-2)$

$\ \ \downarrow \quad \downarrow$

$\ \ 5 \quad\ \ 2$

$\mathbb{R}-\{-3, 0, 2, 5\}$

۳

4) $y = \dfrac{x+3}{|2x+1|-|x+3| \neq 0}$ $\quad -\frac{1}{2} \quad -3$

$-2x-1+x+3$	$-2x-1-x-3$	$2x+1-x-3$
$-x+2=0$	$-3x-4=0$	$x-2=0$
$\times$	$\underbrace{\frac{-4}{3}=x}$	

$\mathbb{R}-\{-\frac{4}{3}, 2\}$ $\Rightarrow$ ۵

$y = \sqrt{|2x+1|-|x+3|} \geq 0$ $\quad |2x+1| \geq |x+3| \Rightarrow 4x^2+1+4x \geq x^2+9+6x$

$3x^2-2x-8 \geq 0$ $\quad \frac{-4}{3}$

$(x+4)(x-6) < \quad \frac{6}{3}$

$\dfrac{-\frac{4}{3} \quad 2}{+ \ \phi \ - \ \not\phi \ +}$ $(-\infty \ \frac{-4}{3}] \cup [2 \ +\infty)$

5) $y = \log_2(1-\log_3 x) \geq 0$ $\quad x>0$

$1-\log_3 x > 0$

$\log_3 x < 3 \Rightarrow x < 3 \Rightarrow 0<x<3 \to (0 \ 3)$

۵

$y = \log_2(1-\log_{\frac{1}{2}} x) > 0 \Rightarrow 1 > \log_{\frac{1}{2}} x \Rightarrow \log_{\frac{1}{2}} x > 1 \Rightarrow x > \frac{1}{2} \Rightarrow (\frac{1}{2} \ \infty)$

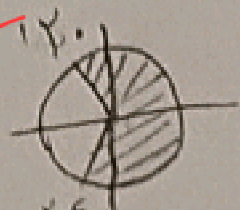
$y = \sqrt{\log_{\frac{1}{2}} \log_5 (2x-1)} > 0 \Rightarrow 2x > 1 \Rightarrow \underline{x > \frac{1}{2}}$ $\quad \log_5^{2x-1} > 0 \Rightarrow 2x-1 > 1 \Rightarrow 2x > 2 \quad x > 1$

6) $\log_{\frac{1}{2}} \log_5^{2x-1} \leq 0 \quad \log_5^{2x-1} \leq 1 \Rightarrow 2x-1 \leq 5 \Rightarrow 2x \leq 6 \to x \leq 3$

۵

$[1 \ \ 3] = D_f$

7) $\log(2\cos x+1) > 0 \quad 2\cos x > -1 \to \cos x > -\frac{1}{2}$



$\mathbb{R}-[2k\pi+\frac{2\pi}{3}, 2k\pi+\frac{4\pi}{3}]$

۵

$y = \sqrt{\log_{\frac{1}{2}} \frac{x-1}{x+1}} \geq 0 \Rightarrow \log \Rightarrow \frac{x-1}{x+1} \geq 1 \Rightarrow \dfrac{x-1-x-1}{x+1} \geq 0 \quad \dfrac{-2}{x+1} \geq 0$ $\quad \dfrac{-1}{+ \ \not\phi \ -}$

$(-\infty \ -1)$

$\dfrac{x-1}{x+1} > 0 \quad \dfrac{-1 \quad 1}{+ \ \not\phi \ - \ \phi \ +} \quad (-\infty \ -1) \cup [1 \ +\infty) \Rightarrow$

جواب $(-\infty \ -1)$