Subject تکلیف ۳
Date

ریاضی / یازدهم [illegible]

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

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

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

ب) $\frac{x+3}{x-1} \geq 0$ $\begin{array}{ccc} -3 & & 1 \\ + \ 0 & - & \nexists \ + \end{array}$ $D_f = \mathbb{R} - (-3, 1]$

۳)

$x^2 - 5x + 5 - 2x + 5 \neq 0 \rightarrow x^2 - 7x + 10 \neq 0 \rightarrow (x-2)(x-5) \neq 0$

$D_f = \mathbb{R} - \{2, 5\}$

۴) الف) $|2x+1| = |x+3|$ $2x+1 = x+3 \rightarrow x = 2$

$2x+1 = -x-3 \rightarrow 3x = -4 \rightarrow x = -\frac{4}{3}$

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

ب) $|2x+1| \geq |x+3| \rightarrow 2x+1 \geq x+3 \rightarrow x \geq 2$

$2x+1 \leq -x-3 \rightarrow 3x \leq -4 \rightarrow x \leq -\frac{4}{3}$

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

۵) الف) $x > 0$

$1 - \log_3 x > 0 \rightarrow 1 > \log_3 x \rightarrow 3 > x$ $D_f = (0, 3)$

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الف) $x>0$ $\quad D_f=(0,\frac{1}{2})$

$1>\log_{\frac{1}{2}}^{x} \to \frac{1}{2}>x$

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

$\log_{5}^{2x-1}>0 \to 2x>2 \to x>1$

$\log_{\frac{1}{2}}^{\log_{5}^{2x-1}}>0 \to \log_{5}^{2x}>0 \to 2x>1 \to x>\frac{1}{2}$

$\log_{10}^{\log_{5}^{2x-1}} \geq 0 \to \log_{5}^{2x-1}\geq 1 \to 2x\geq 6 \to x\geq 3$

$D_f=[3,+\infty)$

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

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

ج) $\frac{x-1}{x+1}>0 \to x>1$ $\quad \log_{x+1}^{x-1}\geq 0 \to x\geq 1$

$x\neq -1$ $\quad D_f=[1,+\infty)$

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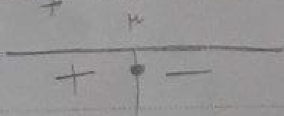
$\sqrt{(a+2)x^2+ax+b}$ $\quad D_f=(-\infty,3]$



$(a+2)x^2+ax+b\geq 0$

$(-x+3)^2=x^2-6x+9$ $\quad a=-6$

$a+2=1 \to a=-1$ $\quad \boxed{b=9}$

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$\sqrt{x^2+2x+2-m^2} \to x^2+2x+2-m^2\geq 0$ $\quad D_f=\mathbb{R} \to$ ریشه ندارد $\to \Delta<0$

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

$4-8+4m^2<0 \to \boxed{m=\pm 1}$

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PAPCO