۱۸/۷۵

نام و نام خانوادگی ..... پاسخنامه تشریحی تکلیف شماره ۳ کلاس یازدهم ریاضی B

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الف) $\frac{x+3}{2x^3+3x^2-8x+3} = \frac{x+3}{(x-1)(2x^2+ax-3)} = \frac{x+3}{(x-1)(x+3)(x-\frac{1}{2})} \Rightarrow D_f = \mathbb{R}-\{1,-3,\frac{1}{2}\}$ ✓

ب) $\frac{x+3}{2x^3+9x^2+10x+3} = \frac{x+3}{(x+1)(2x^2+7x+3)} = \frac{x+3}{(x+1)(x+3)(x+\frac{1}{2})} \Rightarrow D_f = \mathbb{R}-\{-1,-3,-\frac{1}{2}\}$ ✓

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

(x^2-x+1: عبارت مثبت، $\Delta<0$, $c=$ عبارت مثبت)

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$\frac{x+3}{x^3-2x^2+2x-1} \geq 0 \Rightarrow \frac{x+3}{(x-1)(x^2-x+1)} \geq 0 \Rightarrow$ (تعیین علامت: -3 و 1) $\Rightarrow D_f = (-\infty,-3] \cup (1,+\infty)$ ✓

(x^2-x+1: عبارت مثبت)

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$x^2-3|x-1|-2x+5 \neq 0$

if $x>1 \Rightarrow x^2-5x+10 \Rightarrow (x-5)(x-2)$

if $x<1 \Rightarrow x^2+3x \Rightarrow x(x+3)$

$\Rightarrow D_f = \mathbb{R}-\{3,2,0,-3\}$ ✓

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الف) $|2x+1|-|x+3| \neq 0 \Rightarrow |2x+1| \neq |x+3| \Rightarrow 4x^2+4x+1 \neq x^2+6x+9 \Rightarrow 3x^2-2x-8 \neq 0 \Rightarrow (x-2)(x+\frac{4}{3}) \neq 0$

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

ب) $|2x+1|-|x+3| \geq 0 \Rightarrow |2x+1| \geq |x+3| \Rightarrow 4x^2+4x+1 \geq x^2+6x+9 \Rightarrow 3x^2-2x-8 \geq 0 \Rightarrow (x-2)(x+\frac{4}{3}) \geq 0$

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

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الف) $I: x>0$ $\quad II: 1-\log_3^x > 0 \Rightarrow 1 > \log_3^x \Rightarrow x < 3 \Rightarrow I \cap II \Rightarrow (0,3)$ ✓

ب) $I: x>0$ $\quad II: 1-\log_{\frac{1}{2}}^x > 0 \Rightarrow 1 > \log_{\frac{1}{2}}^x \Rightarrow x > \frac{1}{2} \Rightarrow I \cap II \Rightarrow (\frac{1}{2},+\infty)$ ✓

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۶ (۱٫۵)

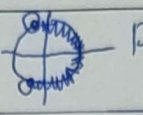
I) $2x-1>0 \Rightarrow x>\frac{1}{2}$ ✓ II) $\log_{\frac{1}{2}}^{(2x-1)}>0 \Rightarrow 2x-1<1 \Rightarrow 2x<2 \Rightarrow x<1$ ✓

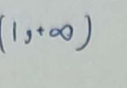
III) $\log_{0.5}^{\log_{\frac{1}{2}}^{(2x-1)}} \geq 0 \Rightarrow 1 \geq \log_{\frac{1}{2}}^{(2x-1)} \Rightarrow \frac{1}{2} \geq 2x-1 \Rightarrow 3 \geq 2x \Rightarrow x \leq \frac{3}{2}$ ✓

$I \cap II \cap III \Rightarrow (\frac{1}{2}, \frac{3}{2}]$

دقت: ۱

۷ (۲)

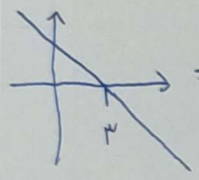
الف) $2\cos 3x+1 \geq 0 \Rightarrow \cos 3x > -\frac{1}{2} \Rightarrow$  $D_f = (2k\pi - \frac{2\pi}{3}, 2k\pi + \frac{2\pi}{3})$ ✓

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

$\Rightarrow I \cap II = (-\infty,-1)$ ✓

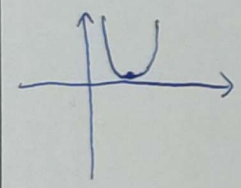
$II) \log \frac{x-1}{x+1} \geq 0 \Rightarrow \frac{x-1}{x+1} \geq 1 \Rightarrow \frac{x-1-x-1}{x+1} \geq 0 \Rightarrow \frac{-2}{x+1} \geq 0 \Rightarrow (-\infty,-1)$

۸ (۲)



$\Rightarrow \begin{matrix} a+2=0 \\ a=-2 \end{matrix} \rightarrow -2x+b \overset{x=2}{\Rightarrow} -4+b=0 \Rightarrow \boxed{b=4}$ ✓

۹ (۱٫۷۵)



$\Rightarrow \Delta \leq 0 \Rightarrow 4-4(1)(2-m^2) \leq 0 \Rightarrow 4m^2+4-8 \leq 0 \Rightarrow 4m^2-4 \leq 0$

$4m^2 \leq 4 \Rightarrow m^2 \leq 1 \Rightarrow -1 \leq m \leq 1$ ✓ $\Rightarrow 1+(-1)=0$ ✗ (۲)

لغت اختلاف!

۱۰ (۱٫۵)

I) $4-x^2 \geq 0 \Rightarrow 4 \geq x^2 \Rightarrow -2 \leq x \leq 2$

دقت: ۲ و ۲-

II) $[x]+[-x]+1 \neq 0 \Rightarrow [x]+[-x] \neq -1$ $\Rightarrow D_f = \{-2,-1.5,-1,-0.5,0,0.5,1,1.5,2\}$

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if $x \in \mathbb{Z} \Rightarrow [x]+[-x]=0$ ✓

if $x \notin \mathbb{Z} \Rightarrow [x]+[-x]=-1$ ✓

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