۱۸٫۲۵

مهدی کاظمی / یازدهم پسر B / تکلیف شماره ۳ (۲)

۱- الف) $= \frac{x+3}{2x^3+3x^2-8x+3}$ → -3

$\div(x-1)$ → $(2x^2+5x+3)(x-1)$ → $+1$

$x = \frac{-5\pm7}{4} = -3, \frac{1}{2}$

-3		$\frac{1}{2}$		1	
+	*	+	−		+

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

ب) $\frac{x+3}{2x^3+9x^2+10x+3}$ → -3

$\div(x+1)$ → $(2x^2+7x+3)(x+1)$ → -1

$x = \frac{-7\pm5}{4} = -3, -\frac{1}{2}$

-3	-1	$-\frac{1}{2}$	
+	+	−	+

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

۲- (۲) الف) $y = \frac{x+3}{x^3-2x^2+2x-1}$ → -3

$\div(x-1)$ → $(x^2-x+1)(x-1)$ → 1

$\frac{+1\sqrt{-3}}{2}$ $\Delta < 0$ بدون ریشه

-3		1	
+	0	−	+

$D_f = \mathbb{R} - \{1\}$ ✓

ب) $y = \sqrt{\frac{x+3}{x^3-2x^2+2x+1}}$

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

$\div(x-1)$

$\Delta < 0$ بدون ریشه

-3	1	
+	−	+

$D_f = \mathbb{R} - [-3, 1]$ ✓

PAYCO

DATE : ……………

(۳ ②

$\dfrac{2}{x^2-7x+10}$ $\quad x \geq 1 \longrightarrow \dfrac{2}{(x-2)(x-5)} \longrightarrow$ $+ \mid - \mid +$ (2, 5)

$D_f: [1, +\infty) - \{2, 5\}$

$\dfrac{30}{x^2+3x}$ $\quad x < 1 \longrightarrow \dfrac{3}{x(x+3)}$ $+ \mid - \mid +$ (-3, 0)

$D_f: (-\infty, 1) - \{-3, 0\}$

$D_f \cup D_f: \mathbb{R} - \{-3, 0, 2, 5\}$ ✓

(۴ ②

الف) $\dfrac{x+3}{|2x+1| - |x+3|}$ $\longrightarrow 4x^2+4x+1 = x^2+6x+9$ ✓

$3x^2-2x-8=0$ $\quad D_f = \mathbb{R} - \{2, -\frac{4}{3}\}$

روش $\longrightarrow x^2-2x-24=0$

$(x-6)(x+4) \longrightarrow x = 2, -\frac{4}{3}$

ب) $y = \sqrt{|2x+1| - |x+3|}$

$|2x+1| - |x+3| \geq 0$ $\quad + \mid - \mid +$ ($-\frac{4}{3}$, 2)

$|2x+1| \geq |x+3|$ $\quad 4x^2+4x+1 \geq x^2+9+6x$

$3x^2-2x-8 \geq 0 \longrightarrow (x-6)(x+4) \geq 0$

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

(۵ ②

الف) $y = \log_2^{(1-\log_3^x)}$ $\quad x > 0$

$1 - \log_3^x > 0 \quad \log_3^x < 1 \quad x < 3$

$0 < x < 3$ ✓

ب) $y = \log_2^{(1-\log_{\frac{1}{2}}^x)}$ $\quad x > 0$

$1 - \log_{\frac{1}{2}}^x > 0 \quad \log_{\frac{1}{2}}^x < 1$ ✓ $x > \frac{1}{2}$

$f(x) = \sqrt{\log_{0/5}^{\log_5(2x-1)}}$ $\quad > 0 \rightarrow x > \frac{1}{2}$

(۶ ۱/۵

$\log^{(2x-1)} > 0$ $\quad \log^{2x-1} \leq 1$

$2x-1 > 1 \quad 2x > 1 \rightarrow x > 1$ ✓ $\quad 2x-1 \leq 5$

✓ $D_f: (1, 3]$ $\quad x \leq 3$ ✓

(۷ ①

الف) $y = \log(2\cos x + 1)$ $\quad 2\cos x + 1 > 0 \quad 2\cos x > -1$

$\cos x > -\frac{1}{2}$

✓ $D = (2k\pi - \frac{2\pi}{3}, 2k\pi + \frac{2\pi}{3})$

ب) ۰

۸) $f(x)=\sqrt{(a+2)x^2+ax+b}$ $\quad a+2=0 \rightarrow \boxed{a=-2}$ ✓

$t(x)=\sqrt{2x+b}$ $\quad -2x+b\geq 0$

$-2(3)+b=0 \rightarrow \boxed{b=6}$ دقت! (۱٫۷۵)

۹) $f(x)=\sqrt{x^2+2x+2-m^2}$ $\quad \Delta\leq 0 \rightarrow 4-4(2-m^2)(1)\leq 0$ (۲)

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

$-1\leq m\leq 1$ ✓

$1-(-1)=2$ ✓

۱۰) $f(x)=\dfrac{\sqrt{4-x^2}}{[x]+[-x]+1}$ $\quad 4-x^2\geq 0$ (۲)

$4\geq x^2 \rightarrow -2\leq x\leq 2$

$[x]+[-x]=-1$ $\quad D_f:\{-2,-1,0,1,2\}$

(۵) عدد صحیح ✓

PAYCO

DATE :