۱۴٫۵

نام و نام خانوادگی ..آیین نصیری.. پاسخنامه تشریحی تکلیف شماره ..۸.. کلاس ..دهم ب..

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الف) $[0,+\infty)$, $\mathbb{R}$ ✗ ✓

ب) برابرند $D_f = D_g = \mathbb{R}$ $f(x) = g(x)$ ← برابرند

ج) ϕ , $2\sin x$ ✗ $D_f = D_g = \mathbb{R}$ $f(x) = g(x) = 2\sin x$ ← برابرند

د) $f(x) = \frac{x}{|x|} \Rightarrow \frac{-1}{1} = -1, \ldots$ $g(x) = \frac{|x|}{x} \Rightarrow \frac{1}{-1} = -1, \ldots$ $g(|x|) = f x$, $D_f = D_g$ برابرند ✓

(۱)

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الف) $x^2 > -1$, $x^2 \neq 1$ ✓ ✓

ب) $(-\infty, 0) \cup [1, +\infty) \cup \{\frac{1}{2}\}$ $g(-\infty, 0) \cup [1, +\infty)$ ✗ ✓

ج) ϕ , $(-\infty, 0)$ ✗ ✓

د) $f(x) = x^2 + x \Rightarrow f_1 = 2$ $g(x) = x^2 + x \Rightarrow g_1 = 2$ $g(1) = f(1)$

$g(x) = f(x)$, $x \neq 1$ ✓ ✓

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$f^2(x) - g^2(x) = (f(x) + g(x))(f(x) - g(x)) \Rightarrow (x^2 + x + 1)(x^2 - x + 1) = x^4 + x^2 + 1$ ✓

$f(x) + g(x) = x^2 + x + 1$

$f(x) - g(x) = x^2 - x + 1$

$2f(x) = 2x^2 + 2 \Rightarrow f(x) = x^2 + 1$ $g(x) = x$ ✓

(۲)

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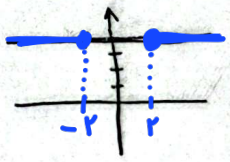
$(x - \sqrt{x^2 - 4})(x + \sqrt{x^2 - 4}) = x^2 - x^2 + 4 = 4$

$D_f = \mathbb{R} - (-2, 2)$



(۱٫۵)

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$\frac{ax + 2}{x^2 - bx + x} = \frac{x - b}{2x^2 - (2-x)} \Rightarrow x^2 - mx + x = 2x^2 - 2x - 5 \Rightarrow x^2 - mx + x = x^2 - 3$ ۱۰

$m = \frac{3}{2}$ $n = -\frac{5}{2}$ $\Rightarrow m = 3$ $n = -1$,

$a = \frac{1}{2}$ $b = -4$

$ax + 2 = x - b \Rightarrow a = 1$ $b = -2$ $am - bn = 2 - 20 = -18$

$am - bn = -\frac{35}{2}$

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$ax+b \neq 0 \quad c \neq 0 \quad a = -\frac{b}{8}$

$x \neq -\frac{b}{8}$

$\frac{bx+2}{8x+b} = c \rightarrow \begin{cases} b = 8c \\ bc = 2 \end{cases} \rightarrow c = \pm\frac{1}{2}$

$b = \pm 4 \qquad a = \pm\frac{1}{2}$

$a, b, c \in \mathbb{R}, \ c \neq 0$

$\frac{ab}{c} = \pm 4$

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$g = \{(3,4)(2,6)(-1,-4)(0,0)\}$

$f = \{(-1,2)(2,4)(3,-2)(0,0)\}$

$2g = \{(3,8)(2,12)(-1,-8)(0,0)\}$

$f+g = \{(-1,-2)(2,8)(3,4)\}$

$\frac{2g}{f+g} = \{(2,1)(3,2)(-1,4)\}$

$\% = [1,2]$

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$a = -1$

$2a - 2b = 1 \Rightarrow -2 - 2b = 1 \Rightarrow -2 - 1 = 2b \Rightarrow -4 = 2b \Rightarrow b = -2$

$a - 2b = c \Rightarrow -1 - (-4) = 3$

$d = a = -1$

$d + c = -1 + 3 = 2$

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$-x^2 + x - m \geq 0 \Rightarrow x^2 - x + m \leq 0 \qquad \Delta = 1 - 4m$

$\Delta = 0 \Rightarrow m = \frac{1}{4} \qquad x^2 - x + \frac{1}{4} = \left(x - \frac{1}{2}\right)^2 = 0 \Rightarrow x = \frac{1}{2}$

$a = \frac{1}{2} \qquad f\left(\frac{1}{2}\right) = \sqrt{-\left(\frac{1}{2}\right)^2 + \frac{1}{2} - \frac{1}{4}} = 0 \Rightarrow a + b = \frac{1}{2} + 0 = \frac{1}{2}$

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$\frac{2x+a}{x^2+4x+b} = \frac{2}{x-c} \Rightarrow (2x+a)(x-c) = 2(x^2+4x+b)$

$(2x+a)(x-c) = 2x^2 + ax - ac - 2xc = 2x^2 + x(a-2c) - ac$

$x^2 + 4x + b = (x-c)^2 \Rightarrow x^2 + 4x + b = x^2 - 2cx + c^2 \Rightarrow -2c = 4$

$a = 4, \ b = 9, \ c = -2 \qquad 4 + 9 - 2 = 11$