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

۱

الف) $[0,+\infty)$, $\mathbb{R}$ ✗

ب) برابرنیستند

ج) ϕ , $2\sin x$ ✗

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

۲

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

$g(x)=f(x)$, $x\neq 1$ ✓

۳

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

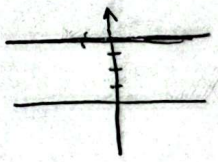
$f(x)+g(x)=x^2+x+1$

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

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

۴

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



۵

$\frac{ax+2}{x^2-bx+x}=\frac{x-b}{2x^2-(2-b)x} \Rightarrow x^2-mx+x=2x^2-2x-b \Rightarrow x^2-nx+x=2x^2-3-10$

$\Rightarrow m=3$ $n=-1$

$ax+2=x-b \Rightarrow a=1$ $b=-2$ $am-bn=3-20=-17$

۶

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

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

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

۸

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

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

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

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

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

$x = [1,4]$

۷

$a = -1$

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

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

$d = a = -1$

$d + c = -1 + 3 = \boxed{2}$

۹

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

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

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

۱۰

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

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

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

$a = 4, \ b = 4, \ c = -2 \qquad 4 + 4 - 2 = 12$