نام و نام خانوادگی ......دانیال ...... پاسخنامه تشریحی تکلیف شماره ...۲... کلاس دوازدهم ......A......

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$f(x) = x^2+2x+1+9x^2-6x+1+mx^2+nx+mn = (10+m)x^2+(n-4)x+2+mn$

$\rightarrow m=-10 \;,\; n=4$

$g(x) = \{(4,-10),(4,\overset{-10}{p+1}),(\overset{-9}{p+2},-1),(-9,\overset{k-11}{p+k})\}$

$p+1=-10 \rightarrow p=-11$

$k-11=-1 \rightarrow k=1$

$m+n+p+k = -10+4+(-11)+1 = \boxed{-16}$

۲

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

	-2		2^*	
$-$		$+$		$+$

$\boxed{D=(-2,+\infty)-\{2\}}$

ب) $y = \dfrac{2x^2+1}{4-2[-x]}$

	-2		-1 ($\frac{3}{2}$)	
$-$				$+$

$\boxed{D=[-1,+\infty)}$

۳

الف) $y = \dfrac{\sqrt{x(x-1)(x+1)}}{\sqrt{|x|+x}} \longrightarrow x(x-1)(x+1) \geq 0$

	-1		0		1	
$-$		$+$		$-$		$+$

$[-1,0]\cup[1,+\infty)$

$|x|+x > 0 \longrightarrow x \in Z^+$ $\quad \boxed{D_f:[1,+\infty)}$

ب) $y = \dfrac{\sqrt{|x-2|-x^2}}{|x|-1} \longrightarrow |x|-1 \neq 0 \longrightarrow x \neq \pm 1$ $\quad \boxed{D_f: (-\infty,-2]\cup(1,+\infty)}$

$|x-2|-x^2 \geq 0 \longrightarrow x^2-|x-2| \leq 0 \begin{cases} x\geq 2 \rightarrow x^2-x+2 \leq 0 \rightarrow \frac{-1 \quad 2}{-\;+\;-} & [2,+\infty) \\ x<2 \rightarrow x^2+x-2 \leq 0 \rightarrow \frac{-2 \quad 1}{-\;+\;-} & (-\infty,-2]\cup[1,2) \end{cases}$

۴

$||x-2|-1|-k=0$

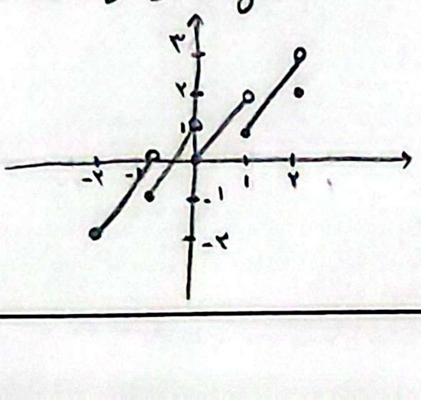
$\begin{cases} x\geq 2 & |x-3|-k=0 \longrightarrow \begin{cases} x\geq 3 & x-3=k \rightarrow x=k+3 \\ x<3 & -x+3=k \rightarrow x=3-k \end{cases} \\ x<2 & |-x+1|-k=0 \longrightarrow \begin{cases} x\leq 1 & -x+1=k \rightarrow x=1-k \\ x>1 & x-1=k \rightarrow x=k+1 \end{cases} \end{cases}$

	$k=1$	$k=-1$
$x=k+3$	۴	۲
$x=3-k$	۲	۴
$x=1-k$	۰	۲
$x=k+1$	۲	۰

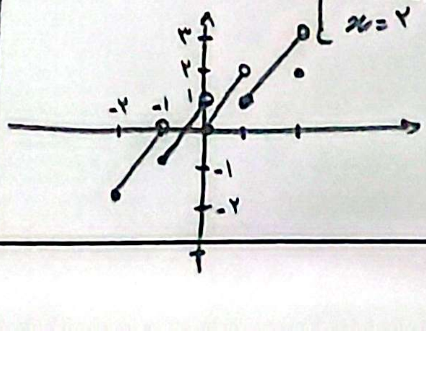
۳ جواب صحیح $\longrightarrow \begin{cases} k+3=1-k \rightarrow \boxed{k=-1} \\ k+1=3-k \rightarrow \boxed{k=1} \end{cases}$

۵

$y = 2x-[x] \rightarrow y'=2$



$f(x)=2x-[x] \quad \begin{cases} -2\leq x<-1 & 2x+2 \\ -1\leq x<0 & 2x+1 \\ 0\leq x<1 & 2x \\ 1\leq x<2 & 2x-1 \\ x=2 & 2x-2 \end{cases}$



۶

$$f(x)=\frac{(x-1)(x-3)}{(x+a)}+b=x$$

$$\rightarrow \begin{cases} a=-1 \rightarrow x-3+b=x \rightarrow b=3 \\ a=-3 \rightarrow x-1+b=x \rightarrow b=1 \end{cases}$$

$$a-b \begin{cases} \rightarrow -1-3=-4 \\ \rightarrow -3-1=-4 \end{cases}$$

۷

$$\frac{x^3+2x^2-x-2}{x^2-1}=\frac{x^2(x+2)-(x+2)}{x^2-1}=(x+2)=x+c \longrightarrow \boxed{c=2}$$

$$g(1)=f(1) \rightarrow 2=\frac{a+2}{b+1} \rightarrow 3b+3=a+2 \rightarrow a=3b+1$$

$$\rightarrow 3b+1=3-b \rightarrow \boxed{b=\frac{1}{2}}$$

$$g(-1)=f(-1) \rightarrow 1=\frac{2-a}{b-1} \rightarrow b-1=2-a \rightarrow a=3-b$$

$$b+c=\frac{1}{2}+2=\boxed{\frac{5}{2}}$$

۸

$$(2f-g)(x)=\{(1,k)\} \rightarrow 2\sqrt{4-2a}+2k-2-\sqrt{b-4}-3k=k$$

$$b-4x\geq 0 \rightarrow b\geq 4x \rightarrow \frac{b}{4}\geq x \rightarrow D_g=(-\infty,\frac{b}{4}] \quad \frac{b}{4}=1 \rightarrow b=4$$

$$4x-2a\geq 0 \rightarrow x\geq \frac{2}{4}a \rightarrow D_f=[\frac{2}{4}a,+\infty) \quad \frac{2}{4}a=1 \rightarrow a=\frac{4}{2}$$

$$2\sqrt{4-4}+2k-2-\sqrt{4-4}-3k=-k-2=k \rightarrow k=-1$$

$$2a-\frac{b}{2}-k=4-2+3=\boxed{5}$$

۹

$$m-x\geq 0 \rightarrow m\geq x \longrightarrow D_f=(-\infty,m]$$

$$2x+2\geq 0 \longrightarrow x\geq -1 \longrightarrow D_g=[-1,+\infty)$$

$$f-g(2)=\sqrt{8}-\sqrt{m-3}-n=4\sqrt{2} \rightarrow \sqrt{m-3}+n=-4\sqrt{2} \rightarrow 2+n=-4\sqrt{2}$$

$$D_f\cap D_g=(-\infty,m]\cap[-1,+\infty)=[-1,7] \rightarrow m=7 \quad \hookrightarrow n=-4\sqrt{2}-2$$

$$m+n=7-4\sqrt{2}-2=\boxed{5-4\sqrt{2}}$$

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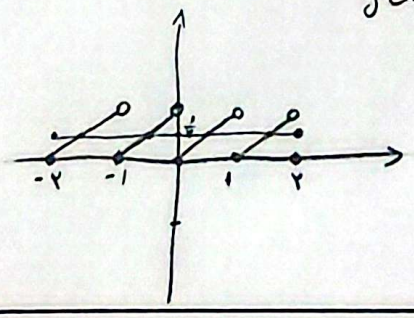
$$y=(-1)^2(x-[x])=\frac{1}{2} \qquad f(x)=x-[x]$$

$$g(x)=\frac{1}{2}$$



$$\rightarrow \text{برخورد } 4 \rightarrow \boxed{\text{۴ جواب}} = \{-\frac{3}{2},-\frac{1}{2},\frac{1}{2},\frac{3}{2}\}$$