نام و نام خانوادگی ...حوزوسیح احدری... پاسخنامه تشریحی تکلیف شماره ...۲... کلاس ...دوازدهم حضر B...

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$f(x) \xrightarrow{\text{تقسیم بر}} x=1 \Rightarrow f(x) = 8+m+n+mn \quad , \quad x=-1 \Rightarrow f(x) = 16+m-n+mn$

$\Rightarrow 24+2m+2mn = 2f(x) \rightarrow 12+m+mn = f(x) \quad , \quad \underset{x=0}{\Rightarrow} f(x) = 2+mn$

$\rightarrow m+10=0 \Rightarrow \boxed{m=-10}$ / $g(x)=\{(4,\underset{-10}{m}),(4,p+1),(\underset{-9}{p+2},-1),(-6,p+k)\}$, $p=-11$, $k=10$

$\rightarrow m-n=-14 \rightarrow \boxed{n=4}$

$\Rightarrow m+n+p+k = -10+4-11+10 = \boxed{-7}$

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الف) $\dfrac{x-2}{(x-2)(x)(x^2+2x+2)} \geq 0 \xrightarrow{x \neq 2}$

$\dfrac{1}{x(\underbrace{x^2+2x+2}_{\text{همواره مثبت}})} \geq 0 \Rightarrow D_f = (0,+\infty)-\{2\}$

ب) $4-2[-x] \neq 0 \longrightarrow$

$4 = 2[-x] \rightarrow 2=[-x] \longrightarrow$

$2 \leq -x < 3 \rightarrow -3 < x \leq -2$

$\Rightarrow D_f = \mathbb{R} - (-3,-2]$

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الف) $f(x) = \dfrac{\sqrt{x(x-1)(x+1)}}{\sqrt{|x|+x}}$ → $-\ \overset{-1}{|}\ +\ \overset{0}{|}\ -\ \overset{1}{|}\ +$; $\sqrt{|x|+x} \rightarrow \mathbb{R}^+$

$\overset{\cap}{\Rightarrow} D_f = [1,+\infty)$

ب) $f(x) = \dfrac{\sqrt{|x-2|-x^2}}{|x|-1} \rightarrow x \neq \pm 1$

$\rightarrow |x-2| \geq x^2 \longrightarrow$

$x-2 \geq x^2 \rightarrow x^2-x+2 \leq 0 \rightarrow$ همواره مثبت ✗

$x-2 \leq -x^2 \rightarrow x^2+x-2 \leq 0$, $+\ \overset{-2}{|}\ -\ \overset{1}{|}\ +$ $\Rightarrow D_f = [-2,1)$

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

- $|x-2| = k+1$
  - $x-2 = k+1 \Rightarrow x-3 = k$
  - $-x+2 = k+1 \Rightarrow 1-x = k$
- $|x-2| = 1-k$
  - $x-2 = 1-k \Rightarrow 3-x = k$
  - $x-2 = k-1 \Rightarrow x-1 = k$

$\xrightarrow{x \neq 3,2,1} \boxed{k = 0, \pm 1}$

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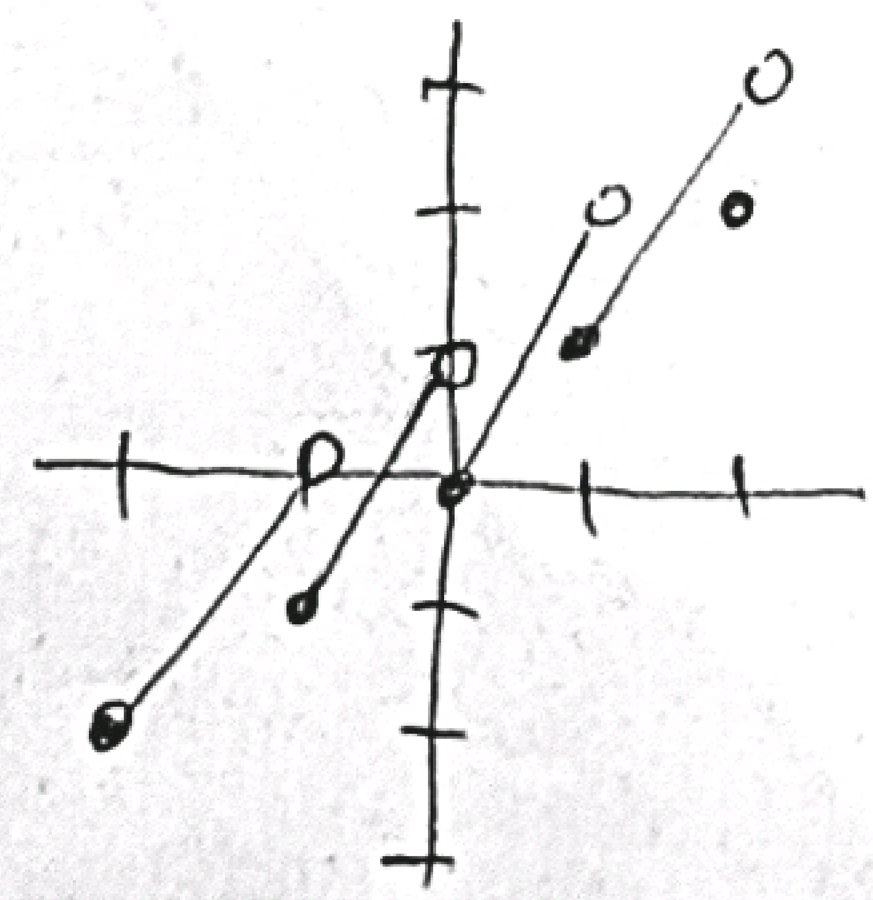
$y = 2x - [x]$, $[-2,2]$

$x = [-2,-1) \rightarrow 2x+2$

$x = [-1,0) \rightarrow 2x+1$

$x = [0,1) \rightarrow 2x$

$x = [1,2) \rightarrow 2x-1$



۶

$f(x)$ ضابطی است $\longrightarrow f(x)=x \Rightarrow \dfrac{x^2-4x+m}{x+n}+b=x \rightarrow x^2-4x+m=(x-b)(x+a)$

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

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

$\longrightarrow a-b=\begin{cases} =-4 \\ =-2 \end{cases} \Rightarrow a-b=\{-4\}$

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$f(x)=\begin{cases} \dfrac{(x-1)(x+1)(x+2)}{(x-1)(x+1)}=x+2 & x\neq\pm1 \\ \dfrac{ax+2}{x+3} & x=\pm1 \end{cases}$, $g(x)=f(x) \Rightarrow$

$x+c=x+2 \Rightarrow \boxed{c=2}$ / $\xrightarrow{x=1} \dfrac{a+2}{1+b}=2 \rightarrow 2b-a=-1$ $\xrightarrow{x=-1} \dfrac{2-a}{b-1}=1 \rightarrow b+a=2$

$\begin{cases} a=\frac{a}{2} \\ \boxed{b=\frac{1}{2}} \end{cases} \Rightarrow \boxed{b+c=\frac{a}{2}}$

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$\begin{cases} f(x)=\sqrt{2x-2a+k}-1 \rightarrow D_f=x\geq\frac{2a}{\varepsilon} \\ g(x)=\sqrt{b-\varepsilon x}+2k \rightarrow D_g=x\leq\frac{b}{\varepsilon} \end{cases} \xrightarrow{D_{2f-g}=\{1\}}$ $\frac{2a}{\varepsilon}=1 \rightarrow \boxed{a=\frac{\varepsilon}{2}}$, $\frac{b}{\varepsilon}=1 \rightarrow \boxed{b=4}$

$\xrightarrow{x=1} 2f-g=k \Rightarrow 2k+2=2\sqrt{2x-1}-2\sqrt{1-x} \Rightarrow k+1=\sqrt{2}$

$\Rightarrow k=\sqrt{2}-1 \longrightarrow 2a-\frac{b}{2}-k=2-2+1-\sqrt{2}=\boxed{2-\sqrt{2}}$

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$f(x)=\sqrt{m-x}+n$ $\xrightarrow{D_{f\times g}=[-1,7]}$ $m-x\geq0 \rightarrow m\geq x$, $x\leq7 \Rightarrow \boxed{m=7}$

$g(x)=\sqrt{2x+2} \rightarrow x\geq-1$

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

$\boxed{m+n=8\sqrt{2}+5}$

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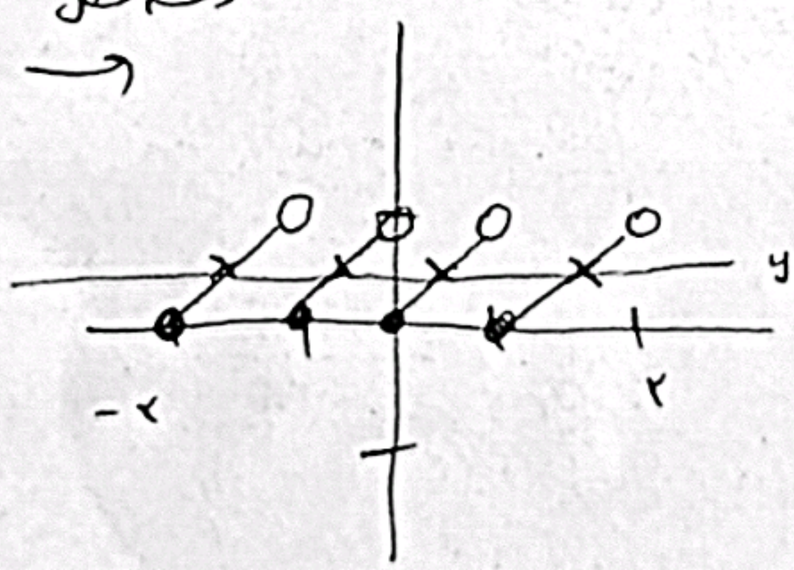
$y=(x-[x])=\frac{1}{2}$ رسم شکل



$\Rightarrow$ 4 جواب دارد در بازه $[-2,2]$