نام و نام خانوادگی .....محمد حسین خورشیدی..... پاسخنامه تشریحی تکلیف شماره ..۲۸.. کلاس .....دهم ریاضی.....

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$a^2+2a=a^2-4 \Rightarrow 2a=-4 \Rightarrow \boxed{a=-2}$

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$f(2)=3=\frac{4+a}{4-b} \Rightarrow 4+a=12-3b$ $\quad g(2)=3=4+b \Rightarrow b=-1$

$\xrightarrow{b=-1} 4+a=12+3 \Rightarrow a=11$

$\Rightarrow f(1)=\frac{1+11}{2+1}=\frac{12}{3}=\boxed{4}$

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$2x^2+ax+b\neq 0 \xrightarrow{x=-1} 2-a+b=0 \xrightarrow{x=4} 32+4a+b=0 \Big\}\xrightarrow{-} 30+5a=0 \Rightarrow a=-6$

$\Rightarrow 2+6+b=0 \Rightarrow b=-8$

$\Rightarrow f(1)=\frac{4+1}{2-16}=\boxed{\frac{-5}{12}}$

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$-4x^2+ax+b\neq 0 \xrightarrow{x=-1} -4-a+b=0 \Rightarrow b-a=4$ (I)

$(x+1)^2=x^2+2x+1 \xrightarrow{\times(-4)} -4x^2\underbrace{-8}_{a}x\underbrace{-4}_{b}$ (II)

$\xrightarrow{\text{II},\text{I}} b-a=4 \Rightarrow -4+8=4$ ✓

$\Rightarrow a+b=-8-4=\boxed{-12}$

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$x^2+mx+1 \xrightarrow{x=1} 1+m+1=0 \Rightarrow m=-2$ (I)

$\hookrightarrow \Delta<0 \rightarrow m^2-4(1)=m^2-4<0 \Rightarrow m^2<4$

$\Rightarrow -2<m<2$ (II)

$\xrightarrow{\text{II},\text{I}} \boxed{m=[-2,2)}$

$x^2 \neq 0 \Rightarrow x \neq 0$ (I)

$4 - \frac{1}{x^2} \geq 0 \Rightarrow \frac{-1}{x^2} \geq -4 \Rightarrow \frac{1}{x^2} \leq 4 \Rightarrow 1 \leq 4x^2 \Rightarrow x^2 \geq \frac{1}{4} \Rightarrow \frac{-1}{2} \leq x \leq \frac{1}{2}$ (II)

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(II), (I) $\Longrightarrow x = \boxed{[\frac{-1}{2}, \frac{1}{2}] - \{0\}}$

$\Delta = 4m^2 - 4(m) = 4m^2 - 4m$

$\Delta \leq 0 \Rightarrow 4m^2 - 4m \leq 0 \Rightarrow m^2 - m \leq 0 \Rightarrow m(m-1) \leq 0$

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$\rightarrow$ 0 (+) 1 (−) (+) $\Rightarrow m = \boxed{[0, 1]}$

$\frac{4x^2 - 1}{2x - 1} = \frac{(2x-1)(2x+1)}{2x-1} = 2x + 1$

$2a - 1 = 0 \Rightarrow 2a = 1 \Rightarrow a = \frac{1}{2}$ (I)

$4x + k \xrightarrow{x = \frac{1}{2}} 2 + k = 2 \Rightarrow k = 0$ (III)

$2x + 1 \xrightarrow{x = \frac{1}{2}} = 2$

(III), (I) $\Longrightarrow a + k = \frac{1}{2} + 0 = \boxed{\frac{1}{2}}$

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$\frac{9x^2 - 4}{3x + 2} = \frac{(3x-2)(3x+2)}{3x+2} = 3x - 2 = 3x + b \Rightarrow b = -2$ (I)

$g(\frac{-2}{3}) = -2 - 2 = -4 = f(\frac{-2}{3}) = -2a + 2 \Rightarrow -2a + 2 = -4 \Rightarrow -2a = -6 \Rightarrow a = 3$ (II)

(II), (I) $\Longrightarrow a - b = 3 - (-2) = 3 + 2 = \boxed{5}$

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

$f(2) = 2a^2 + 2a = g(2) = 4 \Rightarrow 2a^2 + 2a = 4 \Rightarrow a^2 + a = 2$

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$\Rightarrow a = \boxed{1, -2}$