۲۰

عارفه سعادت بنیا

۱) $a^2+2a = a^2-4 \rightarrow 2a=-4 \rightarrow a=-2$ ✓

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

$4+a=12-3(-1) \rightarrow a=11$ $\quad f(1)=\frac{x^2+11}{2x+1}=\frac{1+11}{2+1}=\frac{12}{3}=4$ ✓

۳) $x=-1 \; 2(-1)^2-a+b=0$

$2(2)^2+2a+b=0$

$\rightarrow \begin{cases} -2+a-b=0 \\ 32+4a+b=0 \end{cases}$

$30+5a=0 \rightarrow a=-6 \rightarrow b=-8$

$f(1)=\frac{4+1}{2-6-8}=\frac{5}{-12}$ ✓

۴) $-(2x+2)^2=-(4x^2+4+8x)=-4x^2-8x-4$ $\quad a+b=-8-4=-12$ ✓

۵) $\Delta<0 \rightarrow m^2-4<0 \quad m^2<4 \rightarrow -2<m<2$

if $m=-2 \rightarrow x^2-2x+1=0 \rightarrow (x-1)^2=0 \rightarrow x=1$

$-2 \le m < 2 \quad [-2,2)$ ✓

Subject : (  )  Date :

۴) $4-\frac{1}{x^2} \geq 0 \rightarrow 4 \geq \frac{1}{x^2} \rightarrow \frac{1}{4} \leq x^2 \rightarrow x \geq \frac{1}{2}$ , $x \leq -\frac{1}{2}$

۳)

$x^2 \neq 0 \rightarrow x \neq 0$ $\quad D_f = (-\infty, -\frac{1}{2}] \cup [\frac{1}{2}, +\infty)$

۷) $mx^2 + 2mx + 1 = 0 \rightarrow \Delta \leq 0 \cdot 4m^2 - 4(m)(1) \leq 0$

۲) $4m^2 - 4m \leq 0 \rightarrow \underset{0}{m}(\underset{1}{4m-4}) \leq 0$ $\quad$ + | 0 − 1 + $\quad m \in [0,1]$

۸) $2x - 1 \neq 0 \rightarrow 2x \neq 1$

۲) $x \neq \frac{1}{2} \rightarrow a = \frac{1}{2}$

$f^2(\frac{1}{2}) + k = 2(\frac{1}{2})^2 + 1 \rightarrow k = 0$

$a + k = 0 + \frac{1}{2} = \frac{1}{2}$

۹) ۳)

$3(\frac{-2}{3})a + 2 = 3(\frac{-2}{3}) + b \rightarrow -2a + 2 = -2 + b$

if $x = 1 \rightarrow 3(1) + b = \frac{9(1) - 4}{3(1) + 2} \rightarrow 3 + b = 1 \rightarrow b = -2$

$-2a + 2 = -2 - 2 \rightarrow -2a = -4$

$a = 3$

$a - b = 3 - (-2) = 5$

۱۰) ۳)

$2a^2 + 2a = 4 + 2 \rightarrow 2a^2 + 2a - 4 = 0 \rightarrow a^2 + a - 2 = 0$

$(a-1)(a+2) = 0$

$a = 1, \quad a = -2$

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