10

Year: Month: Date: ( ) Subject:

$f(x)=\sqrt{x|x|}$, $g(x)=x \to R$ ✗ ✓ ۵ ۱۵

$x|x| \geq 0 \Rightarrow R^+ \cup \{0\}$

$f(x)=\frac{(x+1)^2(x+1)+x+1}{x^2+2x+1}$, $g(x)=1$ $D=R$ ✓ ✓

$f(x)=\frac{2\sin^2 x - 2\sin x}{2\sin x - 1}$, $g(x)=2\sin x$ ✗

$f(x)=\frac{x}{|x|}$, $g(x)=\frac{|x|}{x}$ ✗ ✓

$D_f=R$ $D=R-\{0\}$

$f(x)=\left[\frac{x^2}{[x^2+1]}\right]$, $g(x)=[x-[x]]$ ۵ ۱۵ ✓

$\frac{x^2+1-1}{x^2+1}=\left[1-\frac{1}{x^2+1}\right]=[1]$ ✗ ?

$f(x)=\frac{1}{[2x]}$, $g(x)=\frac{1}{2[x]}$ ۴

$f(x)=\frac{1}{\sqrt{x-|x|}}$, $g(x)=\frac{1}{\sqrt{|x|-x}}$ ۵ ۱۵ ✓

$x-|x|>0$ $|x|-x>0$

$x>|x|$ ✗ $|x|>x$ R^-

$f(x)=\begin{cases}\frac{x^2-x}{x-1} & x\neq 1 \\ 2 & x=1\end{cases}$, $g(x)=x^2+x$ ۴ ✓

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

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

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

$2g(x)=2x \Rightarrow g(x)=x$ ✓ ۲-۱

$f(x)=x^2+1$ ، $g(x)=x$

حاصل $f^2(x)-g(x)$

Year: Month: Date: ( ) Subject:

۴. (۱/۵) شکل تابع؟

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

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

$b = \sqrt{x^2-4} \quad a = x$

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

$f(x)\,g(x) = 4$

۵. (۲)

$x^2 - mx + h = \frac{1}{2}(2x^2 - 3x - 5) \Rightarrow m = \frac{3}{2}, \; h = -\frac{5}{2}$

$ax + 2 = \frac{1}{4}(x - b) \Rightarrow a = \frac{1}{4}, \; b = -8$

$am - bh = \frac{1}{4} \times \frac{3}{2} - (-8) \times (-\frac{5}{2}) = \frac{3}{8} - 10 = -\frac{37}{8}$

Year: ..... Month: ..... Date: ..... ( ) Subject: .....

$2f-1=\{(-1,3)(2,7)(3,-5)(0,0)\} \Rightarrow f=(-1,2)(2,4)(3,-2)(0,\frac{1}{2})$ -۷

۲

$g\{(2,4)(3,4)(-1,-4)(0,0)\} \Rightarrow 2g=(2,8)(3,12)(-1,-8)(0,0)$

$\frac{2g}{f+g}=(-1,\frac{-8}{12})(2,\frac{12}{8})(3,\frac{12}{4})$

۵ -۶

$\frac{-b}{8}=a$

$b=-8a$

$\frac{-8a+2}{8a-8a}=0$

نسترن اسماعیلی

$x=0 \Rightarrow \frac{a}{3} = \frac{2}{9} \Rightarrow \frac{a}{9} = \frac{2}{3}$ (crossed out)

$f(x) = \frac{2x+a}{x^2+6x+b}$ $\qquad \frac{2x+a}{x-c} = \frac{2}{x^2+6x+b}$

$g(x) = \frac{2}{x-c}$

$\to x^2 - 2xc + c^2 \Rightarrow 6 = -2c$

$a+b+c = \frac{2}{3} + 9 - 3 = \frac{2+27-9}{3} = \frac{20}{3}$ (crossed out)

$-3 = c$ ✓ $\qquad 9 = b$ ✓

$f(x) = \sqrt{-x^2+x-m}$ $\qquad -x^2+x-m = (a,b)$

$x=0 \Rightarrow -m = (a,b)$ $\qquad a,b = R$

$g(x) = \{(a,b)\}$

$f = \{(2,a), (-3, 3a-2b), (4,5), (2,d)\}$

$g = \{(2,-1), (-3,1), (a-2b, 5)\}$

$a = -1$ ✓

$3a - 2b = 1$

$-3 - 2b = 1$

$-4 = 2b$

$-2 = b$ ✓

$a - 2b = c$

$-1 + 6 = c$

$5 = c$ ✓

$d + c = -1 + 5 = 4$

$d = -1$ ✓