۱۹,۷۵

باران قاسمی   شماره ۲

Subject: Year: Month: Day:

-۱ $y=\sqrt{xf(x)} \to xf(x) \geq 0$

$x=5 \leftarrow \quad \to x=0$

$x=-5 \quad x=2$

$-5 \quad 0 \quad 2 \quad 5$: $- \; + \; - \; + \; -$ $\to D_f=[-5,0]\cup[2,5]$

(۲)

-۲ $y=\sqrt{\frac{-x}{f(x)}} \to \frac{-x}{f(x)} \geq 0 \to$ مختلف العلامة $f(x), x$, $f(x)\neq 0 \to D_f=(-3,0)\cup(0,2)=$

$(-3,2)-\{0\}$

(۳)

$-2, -1, 1, 0 = \{3$

-۳ $f(x)-2f(2)=x^2-3x+4$ $f(2) \to x=2 \to f(2)-2f(2)=4-6+4 \to -f(2)=2 \to f(2)=-2 \to 2f(2)=-4$

$\boxed{f(-2)=?}$ $f(x)\cancel{-2f(2)}^{+4}=x^2-3x+4 \to x=-2 \to f(-2)+\cancel{4}=4+6+\cancel{4} \to f(-2)=10$

(۲)

-۴ (۲)

$f(x)=\begin{cases} x-\sqrt{x+4} & : x>3 \\ 2x+3 & : x\leq 3 \end{cases}$

$f(f(5))+f(f(1))$

$f(5)=5-\sqrt{9}=2$

$f(f(5))=f(2)=4+3=7$

$f(1)=2+3=5$

$f(f(1))=f(5)=5-3=2$

$f(f(5))+f(f(1))=7+2=9$

-۵ (۱,۷۵)

$f(x)=ax^2-bx+2 \to f(x-1)=a(x^2+1-2x)-b(x-1)+2-ax^2+bx-2=6x+2$

$a-b=-8$

$f(x-1)-f(x)=6x+2 \to ax^2+a-2ax-bx+b+2-ax^2+bx-2=6x+2$

$a+b-2ax=6x+2 \to a+b=2 \to -3+b=2 \to b=5$

$-2ax=6x \to -2a=6 \to 2a=-6 \to a=-3$

-۶ (۲)

$f(x)=\frac{x^2+4x+5}{x^2+4x+7}$ $f(\sqrt{3}-2)=\frac{(\sqrt{3}-2)^2+4(\sqrt{3}-2)+5}{(\sqrt{3}-2)^2+4(\sqrt{3}-2)+7}=\frac{3+4-\cancel{4\sqrt{3}}+\cancel{4\sqrt{3}}-8+5}{3+4-\cancel{4\sqrt{3}}+\cancel{4\sqrt{3}}-8+7}=\frac{4}{6}=\frac{2}{3}$

Pasha

Subject: $f(x-\frac{1}{x})=(x-\frac{1}{x})^2+2$ Year: Month: Day:

$f(x-\frac{1}{x})=\frac{x^4+1}{x^2} \Rightarrow \frac{x^4}{x^2}+\frac{1}{x^2}=x^2+\frac{1}{x^2} \to (x+\frac{1}{x})^2-x^2+\frac{1}{x^2}-2 \to x^2+\frac{1}{x^2}=(x-\frac{1}{x})^2+2$ ۲

$f(-3)=?$ $\to f(x)=x^2+2 \to f(-3)=(-3)^2+2=9+2=11$

$f(x)=\{(2,0)(1,-4)(0,2)(7,1)\} \to D_f=2,1,0,7$ } مشترک $D=0,1,2$ ۸.

$g(x)=\sqrt{9-x^2} \to (3-x)(3+x)\geq 0$ $\quad \frac{-3 \quad 3}{-\,\bullet + \bullet\, -} \to D_g=[-3,3]$ ۵

الف) $\frac{f}{g}=\{(0,\frac{2}{3})(1,\frac{-4}{\sqrt{8}})(2,\frac{0}{\sqrt{5}})\}=\{(0,\frac{2}{3})(1,-\sqrt{2})(2,0)\}$

ب) $\frac{g}{f}=\{(0,\frac{3}{2})(1,\frac{\sqrt{8}}{-4})\}=\{(0,\frac{3}{2})(1,\frac{-\sqrt{2}}{2})\}$

$\frac{-\sqrt{2}}{2}$

$(2,\cancel{\frac{\sqrt{5}}{0}})$ ت ن

$f(x)=\{(2,1)(3,4)(-5,2)(1,-2)\}$ ۹.

الف) $2f(x)=\{(2,2)(3,8)(-5,4)(1,-4)\}$ ب) $f(x)+1=\{(2,2)(3,5)(-5,3)(1,-1)\}$

ج) $3f^2(x)+1=\{(2,4)(3,49)(-5,13)(1,13)\}$ د) $f(2x)=\{(1,1)(\frac{3}{2},4)(\frac{-5}{2},2)(\frac{1}{2},-2)\}$

۴

$f(x)=\{(2,3)(7,2)(1,4)(3,1)(5,2)\}$ } مشترک $D=2,1,3$ ۱۰.

$g(x)=\{(1,0)(2,1)(-1,4)(-2,-3)(3,-1)\}$ $2f=\{(2,6)(7,4)(1,8)(3,2)(5,4)\}$ ۳

الف) $f-g=\{(2,2)(1,4)(3,2)\}$ ب) $\frac{2f}{g}=\{(2,6)(1,\cancel{\frac{8}{0}})(3,-2)\}=\{(2,6)(3,-2)\}$

ت ن

Pasha