آدرین شفایی زاده دهم ریاضی B

$\sqrt{xf(x)} \Rightarrow xf(x) \geq 0 \Rightarrow \begin{cases} x=0 \\ f(x)=0 \Rightarrow x=-5,5,2 \end{cases} \Rightarrow D_f=[-5,0]\cup[2,5]$

− −5 + 0 − 2 + 5 −

$\sqrt{\frac{-x}{f(x)}} \Rightarrow \frac{-x}{f(x)} \geq 0$

−3 0 2 5

$D_f=(-3,0)\cup(0,2)\cup(5,+\infty)$

$\{-2,-1,1,6,7,8,\dots\}$

$\Rightarrow f(2)-2f(2)=4-6+4=2=-f(2) \Rightarrow f(2)=-2$

$\Rightarrow f(-2)+4=4+6+4 \Rightarrow f(-2)=10$

$f(f(1)) \Rightarrow f(1)=5 \Rightarrow f(5)=2=f(f(1))$

$f(f(5)) \Rightarrow f(5)=2 \Rightarrow f(2)=7=f(f(5))$

$\Rightarrow 7+2=9$

$f(0)-f(1)=8$

$f(0)=2$

$\Rightarrow f(1)=-6=a-b+2 \Rightarrow -8=a-b$

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

$x-\frac{1}{x}=-3 \Rightarrow x^2+3x-1 \Rightarrow x=\frac{-3+\sqrt{13}}{2},\ \frac{-3-\sqrt{13}}{2} \Rightarrow f(-3)=f(x-\frac{1}{x})=x^2+\frac{1}{x^2}$

$x-\frac{1}{x}=-3 \Rightarrow (x-\frac{1}{x})^2=9 \Rightarrow x^2-2+\frac{1}{x^2}=9 \Rightarrow x^2+\frac{1}{x^2}=11=f(-3)$

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

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

9- أ) $2f(x) = \{(2,4), (3,8), (-5,4), (1,-4)\}$

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

ج) $3f^2(x)+1 = \{(2,4), (3,19), (-5,13), (1,13)\}$

د) $f(2x) = \{(2,\frac{1}{2}), (3,2), (-5,1), (1,-1)\}$

10- أ) $f \cdot g = \{(2,2), (1,4), (3,2), (7,2), (5,2)\}$

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