نام و نام خانوادگی ..... پاسخنامه تشریحی تکلیف شماره 1 ..... کلاس یازدهم

$A\times B=\{(1,2),(2,2),(3,2),(1,3),(2,3),(3,3)\}$ (۱۷٫۵)

$B^2=\{(2,2),(3,3),(2,3),(3,2)\}$

$A\times B-B^2=\{(1,2),(1,3)\}$ (۲)

$f(x)=\{(2,m^2),(2,1),(-3,m),(-2,m),(3,m+2),(m,4)\}$ (۲)

$m^2=m+2 \Rightarrow m^2-m-2=0 \Rightarrow (m-2)(m+1)=0$

$m\neq 2$ (رد)

$m=-1$ (قبول)

$g(x)=\{(2,m^2),(2,1),(m,4),(3,m+2),(-2,m),(-1,4)\}$

$m^2=m+2 \Rightarrow m^2-m-2=0$

$m\neq -1$ (رد)

$m\neq 2$ (رد)

برای هیچ مقداری تابع نیست.

$$f(x)\begin{cases} x^2-1 & x\le 1 \\ ax+b & 1\le x\le 2 \\ x^2 & 2\le \end{cases}$$

$x=1 \Rightarrow 0=a+b$

$x=2 \Rightarrow 2a+b=4$

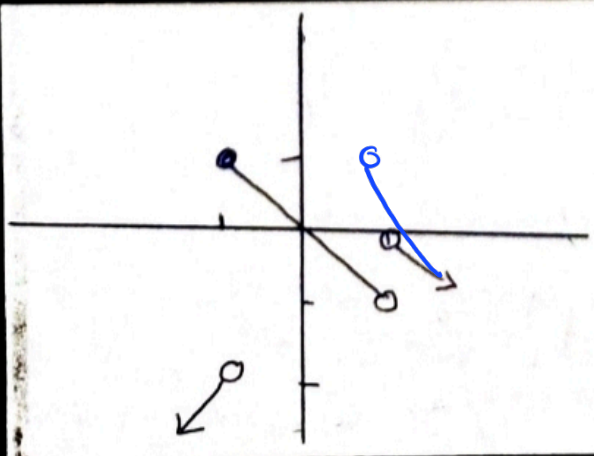
$\Rightarrow a=4,\ b=-4$ (۲)

$a\times b=-16$

$$f(x)=\begin{cases} 2x-3 & x\ge 4 \\ 5-2x & x\le 4 \end{cases}$$

$\Rightarrow 2k-3=5-2k \Rightarrow 4k=8 \Rightarrow k=2$ (۲)

$k=\frac{8}{4}$



$D_f=\mathbb{R}-\{1\}$ $\quad R_f=\mathbb{R}-\{-2,-1,0\}$

$R_f=(-4,1]$ (۱)

$x=1 \quad 2y^2=-2 \Rightarrow y^2=-1 \Rightarrow y=-1$ ✓ قابل است

$x^2+4y^2-2x-12y+10=0 \Rightarrow x=0 \Rightarrow 4y^2-12y+10=0$

$\Delta<0 \Rightarrow D_f=\emptyset \Rightarrow$ قابل است (۲)

$x\sin y = y\sin x \Rightarrow$ ~~$xy\sin y = xy\sin x$~~

$\sin x=0 \Rightarrow \begin{matrix} x=0 \\ x=10 \end{matrix} \Rightarrow x\cdot\sin y=0 \Rightarrow \begin{matrix} x=0 \\ \sin y=0 \Rightarrow \begin{matrix} y=10 \\ y=0 \end{matrix} \end{matrix} \Rightarrow$ نقطه بحرانی

$\sqrt{\frac{x}{y}}+\sqrt{\frac{y}{x}}=2 \Rightarrow \frac{x}{y}+\frac{y}{x}+2=4 \Rightarrow x^2+y^2-2xy=0$ (۲)

$(x-y)^2=0 \Rightarrow x=y \Rightarrow$ قابل است

$\sqrt{\frac{x-1}{x-2}}+\sqrt{\frac{x-2}{x}} \quad D_f=?$

$\frac{x-1}{x-2}: \begin{array}{c|ccc} & 1 & 2 & \\ \hline + & - & \| & + \end{array} \Rightarrow (-\infty,1]\cup(2,+\infty)$ I

$\frac{x-2}{x}: \begin{array}{c|ccc} & 0 & 2 & \\ \hline + & - & \| & + \end{array} \quad (-\infty,0)\cup[2,+\infty)$ II

$x\in(0,1]$

$I\cap II \rightarrow (0,1] \Rightarrow D_f=[0,1]$ $0\le x\le 1$ (۱)

$\sqrt{\frac{x^2-7x+6}{x^2-10x+16}} \Rightarrow \frac{\sqrt{(x-1)(x-6)}}{\sqrt{(x-2)(x-8)}}$

$\begin{array}{c|ccc} & 1 & 6 & \\ \hline + & - & + & \end{array} \quad (-\infty,1]\cup[6,+\infty)$ I

$\begin{array}{c|ccc} & 2 & 8 & \\ \hline + & - & + & \end{array} \quad (-\infty,2)\cup(8,+\infty)$ II

$I\cap II \Rightarrow D_f=(-\infty,1]\cup(8,+\infty)$ (۱۵)

$\sqrt{\frac{x^2-7x+6}{x^2-10x+16}} \Rightarrow \frac{\sqrt{(x-1)(x-6)}}{\sqrt{(x-2)(x-8)}}$

$\begin{array}{c|ccccc} & 1 & 2 & 6 & 8 & \\ \hline + & - & + & - & + & \end{array} \Rightarrow D_f=(-\infty,1]\cup[2,6]\cup(8,+\infty)$

$\sqrt{\frac{2x^2-5x+2}{4x^2-7x+3}} \Rightarrow \frac{\sqrt{x^2-5x+6}}{\sqrt{4x^2-7x+3}} \Rightarrow \frac{\sqrt{(x-1)(x-3)}}{\sqrt{(x-1)(4x-3)}} \quad D_f$

$\begin{array}{c|ccc} & 1 & 2 & \\ \hline + & - & + & \end{array} \cap \begin{array}{c|ccc} & 1 & 3/4 & \\ \hline + & - & + & \end{array} \Rightarrow D_f=(-\infty,1]\cup[2,+\infty)$ (۲)

$\sqrt{\frac{2x^2-5x+2}{4x^2-7x+3}} \Rightarrow \sqrt{\frac{(x-1)(2x-1)}{(x-1)(4x-3)}}$

$\begin{array}{c|ccccc} & 1/2 & 3/4 & 1 & & \\ \hline + & - & + & - & + & \end{array}$

$D_f=(-\infty,1)\cup(1,\frac{3}{4})\cup[\frac{1}{2},+\infty)$