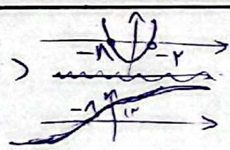
نام و نام خانوادگی ....محمود..... پاسخنامه تشریحی تکلیف شماره ..۲۵.. کلاس ....۱۲A....

۱	$\lim\limits_{x\to 2} \dfrac{2x-5}{x^2+ax+b} \xrightarrow{4-5=(-1)} \Rightarrow -\dfrac{1}{4+2a+b} \Rightarrow 4+2a+b=0^+$ (1) / (2) $\Rightarrow$ ($x=2$) $a<0,\ b>0 \Rightarrow$ $a^2-4b=0 \Rightarrow a^2=4b \Rightarrow \dfrac{a^2}{4}=b \Rightarrow$ (1) و (2) $\Rightarrow 4+2a+\dfrac{a^2}{4}=0 \xRightarrow{\times 4}$ $a^2+8a+16=0 \Rightarrow \underline{a=-4} \Rightarrow \underline{b=4} \Rightarrow b+a=0$
۲	$x\to\sqrt[3]{4} \Rightarrow \dfrac{\sqrt[3]{4} \ldots}{2\sqrt[3]{2}+\sqrt[3]{4}a+b}=+\infty$ (1) $\Rightarrow \underline{a^2=4b} \Rightarrow \dfrac{a^2}{4}=b$ (2) (1) و (2) $\Rightarrow \dfrac{a^2}{4}+\sqrt[3]{4}a+2\sqrt[3]{2} \xrightarrow{\times 4} a^2+4\sqrt[3]{4}a+8\sqrt[3]{2} \Rightarrow (a+2\sqrt[3]{4})^2 \Rightarrow a=-2\sqrt[3]{4}\ /\ b=2\sqrt[3]{2}$ $\left[\dfrac{b}{a}\right]=\left[\dfrac{2\sqrt[3]{2}}{-2\sqrt[3]{4}}\right]=-1$
۳	$\dfrac{[x]+a}{\left\lvert\frac{\sqrt{3}}{3}x+a\right\rvert+a}=-\infty \Rightarrow \dfrac{-1+a}{\left\lvert\sqrt{3} \ldots +a\right\rvert+a \to 0^+}=-\infty \Rightarrow \begin{cases} -1+a \Rightarrow (-) \\ \sqrt{3}+2a=0 \Rightarrow a=-\frac{\sqrt{3}}{2} \end{cases}$ $[a]=\left[-\dfrac{\sqrt{3}}{2}\right]=-1$
۴	$\dfrac{16x-\left[\frac{-2}{x^2}\right]}{24x+\left[\frac{3}{x^2}\right]} = \begin{cases} 16(-\frac{1}{2}) \Rightarrow -8^+ - \left[\frac{-2}{(-\frac{1}{2})^2}\right] \Rightarrow \ldots \\ 24\times -\frac{1}{2} \Rightarrow -12+\left[\frac{3}{x^2}\right] \Rightarrow 0 \end{cases} \Rightarrow \dfrac{16x+9}{24x+12} \xRightarrow{x=-\frac{1}{2}}$ $x\to -\frac{1}{2}^+$; $\quad -12^+ + 12 = 0^+$ $\dfrac{+1}{0^+} \Rightarrow +\infty$
۵	$\dfrac{x^2-4}{x^3-[x^3]} \Rightarrow \dfrac{(x-2)(x+2)}{(x-2)(x^2+2x+4)} \Rightarrow \dfrac{4}{12}=\dfrac{1}{3}$ $x\to 2^-$; $\quad [x^3] \to x-8$

$\frac{x^3+10x+16}{12+6\sqrt[3]{x}} \Longrightarrow x \to -8 \Rightarrow$  $\Rightarrow \frac{(x+2)(x+8)}{6(2+\sqrt[3]{x})} \times \frac{\sqrt[3]{x^2}-2\sqrt[3]{x}+4}{\sqrt[3]{x^2}-2\sqrt[3]{x}+4}$

$\frac{(x+2)(\sqrt[3]{x^2}-2\sqrt[3]{x}+4)}{6} \Rightarrow x \to -8 \Rightarrow \frac{(-6)(10)}{6} = \underline{-10}$ ۶

$\frac{\sqrt{2+3x}-\sqrt{2-x}}{\sqrt{1-\cos x}} \times \frac{\sqrt{2+3x}+\sqrt{2-x}}{\sqrt{2+3x}+\sqrt{2-x}}$ ، هم‌ارزی $1-\cos x \Rightarrow \frac{4x}{\sqrt{\frac{x^2}{2}}} \xRightarrow{|x|=-x} \Rightarrow \frac{4x\sqrt{2}}{-x}$

$\Rightarrow \underline{-4\sqrt{2}}$ ۷

$\frac{k+\cos(\sqrt{ax}) \to 0^-}{kx^2 \to 0} = 3 \Rightarrow k+\cos 0 \Rightarrow k+(+1)=0^- \Rightarrow \underline{k=-1}$

هم‌ارزی $\Rightarrow \frac{-1+\cos\sqrt{ax}}{-x^2} \Rightarrow \frac{\frac{ax^2}{2}}{-x^2} \Rightarrow -\frac{a}{2}=3 \Rightarrow \underline{a=-6}$ $\Rightarrow \frac{a}{k}$ ، $\underline{6}$ ۸

$\frac{3\sqrt{x-3a}+3\sqrt{x}-\sqrt{27a}}{\sqrt{x^2-9a^2}} \Rightarrow \frac{3\cancel{\sqrt{x-3a}}}{\cancel{\sqrt{x-3a}}\sqrt{x+3a}} + \frac{3(\sqrt{x}-\sqrt{3a})}{(\sqrt{x-3a})(\sqrt{x+3a})} \times \frac{\sqrt{x}+\sqrt{3a}}{\sqrt{x}+\sqrt{3a}} \to 0$

$x \to 3a^+$ $\frac{3}{\sqrt{x+3a}} + 0^- \xRightarrow{x \to 3a} \Rightarrow \underline{\frac{3}{\sqrt{6a}}}$ ۹

$\frac{1-k[x]}{(x-1)(x+1)}$ $\to + \Rightarrow \frac{1+k}{\cancel{(x+1)(x-1)} \to 0^-} \Rightarrow 1+k>0 \Rightarrow k>-1$

$\to - \Rightarrow \frac{1+2k}{\cancel{(x-1)(x+1)} \to 0^+} \Rightarrow 1+2k<0 \Rightarrow k<-\frac{1}{2}$ $\Big\} \underline{-1<k<-\frac{1}{2}}$ ۱۰

ناحیه سوم $\Leftarrow$ $\Leftarrow (k\pi, \cos k\pi) \to (-\pi, \frac{\pi}{2})\ (-1, 0)$