نام و نام خانوادگی ..امیرعلی تنهایی.......... پاسخنامه تشریحی تکلیف شماره ...۲... کلاس ..دوازدهم ب.........

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$$\lim_{x\to 2}\frac{2x-5}{x^2+ax+b}=-\infty \longrightarrow \lim\frac{-1}{0^+}=-\infty$$

$$(x-2)^2=x^2-4x+4 \longrightarrow \begin{matrix}a=-4\\ b=4\end{matrix} \longrightarrow a+b=0$$

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$$\lim_{x\to\sqrt[3]{4}}\frac{x}{x^2+ax+b}=+\infty \Rightarrow \lim_{x\to\sqrt[3]{4}}\frac{\sqrt[3]{4}}{(x-\sqrt[3]{4})^2}=+\infty$$

$$x^2-2\sqrt[3]{4}\,x+\sqrt[3]{16}$$

$$\begin{matrix}a=-\sqrt[3]{32}\\ b=\sqrt[3]{16}\end{matrix} \to \left[\frac{b}{a}\right]=\left[\sqrt[3]{2}\right]=$$

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$$\left|\frac{\sqrt{3}}{3}x+a\right|+a=0 \longrightarrow \left|\frac{\sqrt{3}}{3}\times\frac{1}{\sqrt{3}}+a\right|+a=0 \longrightarrow \left|\frac{1}{3}+a\right|+a=0$$

$$\xrightarrow{\text{داخل قدر مطلق }+} \frac{1}{3}+a+a=0 \longrightarrow \frac{1}{3}+2a=0 \longrightarrow 2a=\frac{-1}{3} \longrightarrow a=\frac{-1}{6}$$

$$[a]=-1$$

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$$\lim\frac{-8-[-8^-]}{-12^+ +[12^+]}=\frac{-8-(-9)}{-12^+ +12}=\frac{1}{0^+}=+\infty$$

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$$\lim_{x\to 2^+}\frac{x^2-4}{x^3-[8^+]}=\frac{x^2-4}{x^3-8}\overset{HOP}{\Longrightarrow}\frac{2x}{3x^2}=\frac{2(2)}{3(2)^2}=\frac{4}{12}=\frac{1}{3}$$

$$\lim_{x\to -8}\frac{x^2+10x+16}{12+6\sqrt[3]{x^2}} \overset{\frac{0}{0}}{\underset{Hop}{=}} \lim_{x\to -8}\frac{2x+10}{6\times\frac{1}{3}\times\frac{1}{\sqrt[3]{x^2}}} = \frac{-6}{\frac{1}{2}} = -12$$ 6

$$\cos x \sim 1-\frac{x^2}{2} \rightarrow 1-\cos x \sim \frac{x^2}{2}$$

$$\lim_{x\to 0^-}\frac{\sqrt{2+3x}-\sqrt{2-x}}{\sqrt{\frac{x^2}{2}}} \overset{\frac{0}{0}}{=} \lim_{x\to 0^-}\frac{\sqrt{2+3x}-\sqrt{2-x}}{\sqrt{\frac{x^2}{2}}}\times\frac{2\sqrt{2}}{2\sqrt{2}} = \lim_{x\to 0^-}\frac{2+3x-2+x}{x\times\frac{1}{\sqrt{2}}\times 2\sqrt{2}} = \lim_{x\to 0}\frac{4x}{2x} = 2$$ 7

$$K+\cos 0=0 \longrightarrow K+1=0 \longrightarrow K=-1$$

$$\lim_{x\to 0}\frac{-1+\cos(\sqrt{a}\,x)}{-x^2} = \frac{-1+1-\frac{ax^2}{2}}{-x^2} = \frac{-\frac{ax^2}{2}}{-x^2} = \frac{a}{2} = 3 \longrightarrow a=6$$ 8

$$\frac{a}{K}=-6$$

$$\lim_{x\to 3a}\frac{2\cancel{\sqrt{x-3a}}}{\cancel{\sqrt{x-3a}}\times\sqrt{x+3a}} + \frac{3(\sqrt{x}-\sqrt{3a})}{\sqrt{x-3a}\times\sqrt{x+3a}}\times\frac{\sqrt{x}+\sqrt{3a}}{\sqrt{x}+\sqrt{3a}} = \frac{3(\cancel{x-3a})\sqrt{x-3a}}{\cancel{\sqrt{x-3a}}\times\sqrt{x+3a}(\times\sqrt{x}+\sqrt{3a})}$$ 9

$$\lim_{x\to 3a}\frac{2}{\sqrt{6a}} + \frac{\overbrace{3\sqrt{x-3a}}^{\to 0}}{\sqrt{x+3a}\times(\sqrt{x}+\sqrt{3a})} = \frac{2}{\sqrt{6a}}+0 = \frac{2}{\sqrt{6a}}$$

$$-1^+ \; \frac{1+K}{\underbrace{(x-1)(x+1)}_{\to 0}} = -\infty \qquad \begin{array}{ccc} & -1 & 1 \\ + & - & + \end{array} \qquad 1+K>0 \longrightarrow K>-1$$ 10

$$-1^- \; \frac{1+2K}{(x-1)(x+1)} = \frac{1+2K}{0^+} = -\infty \qquad 1+2K<0 \longrightarrow 2K<-1 \longrightarrow K<\frac{-1}{2}$$

$-1<K<\frac{-1}{2} \longrightarrow -\pi<K\pi<\frac{-\pi}{2} \longrightarrow$ ناحیه سوم