نام و نام خانوادگی ....علیرضا نسیمی.... پاسخنامه تشریحی تکلیف شماره ..۵۲.. کلاس ..دهم A..........

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

$$\longrightarrow (x-2)^2 = x^2+ax+b \qquad a=-4 \;,\; b=4$$

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$$\lim_{x\to \sqrt[3]{4}} \frac{\sqrt[3]{4}}{x^2+ax+b} = +\infty \xrightarrow[x\to\sqrt[3]{4}]{} x^2+ax+b = 0^+$$

$$x^2+ax+b = (x-\sqrt[3]{4})^2 \qquad a = -2\sqrt[3]{4} \qquad b = \sqrt[3]{16} \qquad \left[\frac{\sqrt[3]{16}}{-2\sqrt[3]{4}}\right] = -1$$

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$$\lim_{x\to \left(\frac{1}{\sqrt{2}}\right)^+} \frac{-1+a}{|1+a|+a} = -\infty \xrightarrow[a=-\frac{1}{2}]{} \frac{-\frac{1}{2}}{0^+} = -\infty$$

$$|1+a|+a = 0 \longrightarrow 1+a = -a \Rightarrow a = -\frac{1}{2}$$

$$\left[-\frac{1}{2}\right] = -1$$

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$$\lim_{x\to\left(-\frac{1}{2}\right)^+} \frac{16x - \left[-\frac{2}{x^2}\right]}{14x + \left[\frac{3}{x^2}\right]} = \frac{-8-(-9)}{-12^+ + 12} \qquad -\frac{1}{2} < x \to \frac{-2}{x^2} < -8$$

$$-\frac{1}{2} < x \quad 12 < \frac{3}{x^2}$$

$$\Rightarrow \frac{1}{0^+} = +\infty$$

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$$\lim_{x\to 2^+} \frac{x^2-4}{x^3-8} = \frac{(x-2)(x+2)}{(x-2)(x^2+2x+4)} = \frac{4}{4+4+4} = \frac{1}{3}$$

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

$$\frac{(4+4+4)(-6)}{6} = -12$$

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$$\lim_{x\to 0^-} \frac{\sqrt{2+3x}-\sqrt{2-x}}{\sqrt{1-\cos x}} = \frac{2+3x-(2-x)}{\sqrt{2\sin^2\frac{x}{2}}\times\left(\sqrt{2+3x}+\sqrt{2-x}\right)}$$

$$\frac{\cancel{4}x}{\sqrt{2}\times -\sin\frac{x}{2}\times 2\cancel{\sqrt{2}}} = \frac{2\times\frac{x}{2}}{-\sin\frac{x}{2}} \xrightarrow{x\to 0^-} \frac{2\times\frac{x}{2}}{-\frac{x}{2}} = -2$$

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$$\lim_{x\to -1^+}\frac{1+k}{x^2-1} = -\infty \quad \mathrm{I} \to \frac{1+k}{0^-} = -\infty \Rightarrow 1+k>0 \to k>-1$$

$$\lim_{x\to 1^-}\frac{1+2k}{x^2-1} = -\infty \to \frac{1+2k}{0^+} = -\infty \Rightarrow k<-\frac{1}{2}$$

ناحیه سوم

$$\to -1<k<-\frac{1}{2} \to -\pi<k\pi<-\frac{\pi}{2} \Rightarrow -1<\cos k\pi<0$$

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