آرمین نوری

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$$\lim_{x\to 2}\frac{2x-5}{x^2+ax+b}=-\infty \rightarrow \frac{-1}{x^2+ax+b}=-\infty \qquad x^2+ax+b=(x-2)^2=x^2-4x+4$$

$$a=-4 \qquad b=4 \qquad a+b=0$$

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$$\lim_{x\to\sqrt[3]{4}}\frac{x}{x^2+ax+b}=+\infty \rightarrow \frac{\sqrt[3]{4}}{(x-\sqrt[3]{4})^2}=\frac{\sqrt[3]{4}}{x^2-2\sqrt[3]{4}x+\sqrt[3]{16}} \qquad a=-2\sqrt[3]{4} \quad b=\sqrt[3]{16}$$

$$\left[\frac{\sqrt[3]{4}\cdot\sqrt[3]{4}}{-2\sqrt[3]{4}}\right]=\left[\frac{\sqrt[3]{4}}{-2}\right]=\left[-\frac{1/\sim}{2}\right]=-1$$

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$$\lim_{x\to\frac{1}{\sqrt{3}}^+}\frac{[-x]+a}{\left|\frac{\sqrt{3}}{3}x+a\right|+a}=-\infty \rightarrow \frac{-1+a}{\left|\frac{1}{3}^+ +a\right|+a} \qquad \frac{1}{3}+2a=0 \qquad a=-\frac{1}{6}$$

$$\frac{-\frac{7}{6}}{\frac{1}{3}^+-\frac{2}{6}}=\frac{-\frac{7}{6}}{0^+}=-\infty \qquad [a]=\left[-\frac{1}{6}\right]=-1$$

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$$x>-\frac{1}{2} \qquad \frac{1}{x}<-2 \qquad \frac{1}{x^2}>4 \qquad \frac{3}{x^2}>12 \qquad \frac{-2}{x^2}<-8$$

$$\frac{16x+9}{24x+12}\rightarrow\frac{1}{0^+}=+\infty$$

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

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$$\lim_{x\to -8}\frac{x^2+10x+16}{12+6\sqrt[3]{x}}=\frac{0}{0}\xrightarrow{\text{هوپیتال}}\frac{2x+10}{\frac{6}{3\sqrt[3]{x^2}}}=\frac{-6}{\frac{6}{3\sqrt[3]{64}}}=\frac{-6}{\frac{6}{12}}=-12$$

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$$\lim_{x\to 0^-}\frac{\sqrt{2+3x}-\sqrt{2-x}}{\sqrt{1-\cos x}}=\frac{\sqrt{2+3x}-\sqrt{2-x}}{\sqrt{2\sin^2\frac{x}{2}}}=\frac{\sqrt{2+3x}-\sqrt{2-x}}{-\sin\frac{x}{2}\cdot\sqrt{2}}$$

آرمین نوری

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

$$\frac{K + \cos(0)}{0} = 3 \Rightarrow K + 1 = 0 \quad K = -1$$

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$$\lim_{x \to -1} \frac{1 - K[x]}{x^2 - 1} = -\infty$$

$$-1^+ \longrightarrow \frac{1 + K}{x^2 - 1} = \frac{1 + K}{0^-} = -\infty$$

$$-1^- \longrightarrow \frac{1 + 2K}{x^2 - 1} = \frac{1 + 2K}{0^+} = -\infty$$

$$1 + K > 0 \rightarrow K > -1$$

$$1 + 2K < 0 \rightarrow K < -\tfrac{1}{2}$$

$$-1 < K < -\tfrac{1}{2}$$

ب در ناحیه سوم قرار دارد

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