آفرین ★★★ ۲۰ سارا عبداللهی

Subject :
Year: Month: Day:

$$\lim_{x\to 2}\frac{2x-5}{x^2+ax+b}=-\infty \qquad \frac{-}{0^+}=-\infty$$ ۱

مخرج باید $0^+$ باشه

$(x-2)^2=x^2-4x+4$

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

۲

$$\lim_{x\to(\sqrt[3]{4})}\frac{x}{x^2+ax+b}=+\infty \qquad \left[\frac{b}{a}\right]=?$$ ۲-

۲

$$\frac{+}{0^+}\rightsquigarrow(x-\sqrt[3]{4})^2=x^2\underbrace{-2\sqrt[3]{4}}_{a}+\underbrace{\sqrt[3]{4^2}}_{b} \qquad \frac{4^{\frac{2}{3}}}{-2\times 4^{\frac{1}{3}}}=\frac{2^{\frac{4}{3}}}{2^{\frac{5}{3}}}=-\left(\frac{1}{2}\right)^{\frac{1}{3}}$$

$$\left[-\sqrt[3]{\frac{1}{2}}\right]=-1$$

$\sqrt{3}\simeq 1/7$

$$\lim_{x\to\left(\frac{1}{\sqrt{3}}\right)^+}\frac{[-x]+a}{\left|\frac{\sqrt{3}}{3}x+a\right|+a}=-\infty \qquad \underbrace{\left|\frac{1}{3}+a\right|}_{\text{مثبت باید بشه}}+a=0$$ ۳-

$\longrightarrow \frac{1}{3}+2a=0$

$(a>-\frac{1}{3})$

۲ $a=-\frac{1}{6}$

$[a]=-1$

$$\lim_{x\to\left(-\frac{1}{2}\right)^+}\frac{14x-\left[\frac{-2}{x^2}\right]}{24x+\left[\frac{3}{x^2}\right]}=\frac{14x+9}{24x+12}=\frac{1}{0^+}=+\infty$$ ۴-

$x>-\frac{1}{2}$

$x^2<\frac{1}{4}$

$\frac{3}{x^2}>12 \leftarrow \frac{1}{x^2}>4$

۲ $-\frac{2}{x^2}<-8$

Subject :
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کلاس غلامی

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

$[x^3]\to 8$

$\frac{0}{0}$

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$$\lim_{x\to -8}\frac{x^2+10x+16}{12+6\sqrt[3]{x}}=\frac{(x+2)(x+8)}{6(2+\sqrt[3]{x})}=\frac{(x+2)(\cancel{\sqrt[3]{x}+2})(\sqrt[3]{x^2}-2\sqrt[3]{x}+4)}{6(\cancel{2+\sqrt[3]{x}})}$$

$(\sqrt[3]{x})^3+2^3$

$\frac{0}{0}$

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

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$$\lim_{x\to 0^-}\frac{\sqrt{2+3x}-\sqrt{2-x}}{\sqrt{1-\cos x}}\times\frac{P}{P}=\frac{\overbrace{(2+3x-2+x)}^{4x}}{\sqrt{1-(1-\frac{x^2}{2})}\ \underbrace{(\sqrt{2+3x}+\sqrt{2-x})}_{2\sqrt{2}}}=\frac{-4}{2}=-2$$

$\frac{|x|}{\sqrt{2}}=-x$

$\frac{0}{0}$

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$$\lim_{x\to 0}\frac{k+\cos(\sqrt{a}\,x)}{kx^2}=3\ \xrightarrow{HOP}\ \frac{-\sin(\sqrt{a}\,x)\sqrt{a}}{2kx}\ \xrightarrow{HOP}$$

$$\lim_{x\to 0}\frac{-a\cos(\sqrt{a}\,x)}{2k}=\frac{-a}{2k}=3\qquad \frac{a}{k}=-6$$

۵۶۰ $\lim_{x\to(3a)^+} \frac{2\sqrt{x-3a}+3\sqrt{x}-\sqrt{27a}}{\sqrt{x^2-9a^2}}$ 9

$\lim_{x\to 3a^+} \frac{2\cancel{\sqrt{x-3a}}}{\cancel{\sqrt{x-3a}}\sqrt{x+3a}} + 3\underbrace{\left(\frac{\sqrt{x}-\sqrt{3a}}{\sqrt{x-3a}\sqrt{x+3a}} \times \frac{\sqrt{x}+\sqrt{3a}}{\sqrt{x}+\sqrt{3a}}\right)}$

$x-3a = \frac{\cancel{\sqrt{x-3a}}\sqrt{x-3a}}{\cancel{\sqrt{x-3a}}\cdot\sqrt{x+3a}\cdot\sqrt{x}+\sqrt{3a}} = 0$

$= \frac{2}{\sqrt{6a}}$

$\xrightarrow{(-1)^+} \frac{1+k}{0^-} = -\infty \qquad 1+k>0 \qquad k>-1$ 10

$\xrightarrow[(-1)^-]{} \frac{1+2k}{0^+} = -\infty \qquad 1+2k<0 \qquad k<-\frac{1}{2}$

$\underbrace{\qquad\qquad}$

$-1<k<-\frac{1}{2}$

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