ل

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$$\lim_{x\to 2}(2x-5) = 4-5=-1 \Rightarrow x^2+ax+b=(x-2)^2=x^2-4x+4 \Rightarrow a+b=-4+4=0$$ ۱-

$$\lim_{x\to\sqrt[3]{4}} x=\sqrt[3]{4} \Rightarrow x^2+ax+b=(x-\sqrt[3]{4})^2=x^2-2\sqrt[3]{4}\,x+\sqrt[3]{16} \Rightarrow \left[\frac{b}{a}\right]=\left[\frac{\sqrt[3]{16}}{-2\sqrt[3]{4}}\right]=\left[\frac{\sqrt[3]{16}}{-\sqrt[3]{8\times 4}}\right]=\left[-\frac{1}{\sqrt[3]{2}}\right]=-1$$ ۲-

$$\lim_{x\to\left(\frac{1}{\sqrt{3}}\right)^+}\frac{\left[-\frac{1}{\sqrt{3}}\right]+a}{\left|\sqrt{3}a\,\frac{1}{\sqrt{3}}^{+}+a\right|+a}=-\infty \Rightarrow \frac{a-1}{\left|a+\frac{1}{3}^{+}\right|+a}=-\infty$$ ۳-

$$a<0 \xrightarrow{\alpha} \frac{a-1}{-\frac{1}{3}}$$

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

$$\Rightarrow 2a+\frac{1}{3}^{+}=0 \Rightarrow 2a=-\frac{1}{3} \xRightarrow{a+\frac{1}{3}} a=-\frac{1}{6} \Rightarrow [a]=-1$$

$$\Rightarrow \frac{\cancel{16x + 2\left[\frac{+1}{x^2}\right]}}{16 + 3\left[\frac{1}{x^2}\right]} = \frac{2\left(8x + \cancel{\left[\frac{+1}{x^2}\right]}\right)}{3\left(8x + \cancel{\left[\frac{1}{x^2}\right]}\right)} = \frac{2}{3}$$ ـ۴

$$\lim_{x \to 2^+} \frac{x^2-4}{x^3-[x^3]_{8}} = \frac{\cancel{(x-2)}(x+2)}{\cancel{(x-2)}(x^2+4+2x)} = \frac{4}{4+4+4} = \frac{1}{3} \qquad = \frac{2x}{3x^2} = \frac{4}{12} = \frac{1}{3}$$ ـ۵

$$\Rightarrow \frac{2x+10}{9x^{1/3}} = \frac{2x+10}{3x^{2/3}} \Rightarrow \lim_{x \to -8} \frac{2x+10}{3x^{2/3}} = \frac{-6}{3\sqrt[3]{64}} = \frac{-6}{2 \times 4} = -\frac{3}{4}$$ ـ۶

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

$\sqrt{1-\cos x} \longrightarrow$ هم‌ارز $\frac{x^2}{2}$ ـ۷

$$\Rightarrow \lim_{x \to 0^-} \frac{\sqrt{2+3x} - \sqrt{2-x}}{\sqrt{\frac{x^2}{2}}} \longrightarrow \sqrt{2+3(0^-)} - \sqrt{2-(0^-)}$$

$$\sqrt{\frac{x^2}{2}} \xrightarrow[x \to 0^-]{} = \frac{+x}{\sqrt{2}} = \frac{-x}{\sqrt{2}}$$

$$f'(x_0) = \frac{3}{2\sqrt{2+3x}} - \frac{-1}{2\sqrt{2-x}} \Rightarrow \frac{4}{2\sqrt{2}} = \sqrt{2} \Rightarrow \frac{x\sqrt{2}}{\frac{-x}{\sqrt{2}}} = -2$$

$$\lim_{x\to ۰} \frac{k+۱-\cancel{\frac{ax^۲}{۲}}}{kx^۲} = ۳ \Rightarrow \cancel{\frac{۲k+۲-ax^۲}{۲kx^۲}} = ۳ \overset{hop}{\Rightarrow} \lim_{x\to ۰} \frac{-۲ax}{۴kx} \overset{hop}{\Rightarrow} \lim_{x\to ۰} \frac{-\cancel{۲}a}{\cancel{۴}k} = ۲-۸$$

$$\Rightarrow \frac{a}{k} = ۳a\,۲a-۱ = -۶$$

$$\lim_{x\to ۳a^+} \frac{۲\sqrt{x-۳a}+۲\sqrt{x}-۲\sqrt{۳a}}{\sqrt{(x-۳a)(x+۳a)}} \longrightarrow (\sqrt{x}-\sqrt{۳a})^۳ = \sqrt{x^۳}-\sqrt{۲۷}\sqrt{a}\,۳x\sqrt{۳a}+۹a\sqrt{x}$$

$$\Rightarrow ۲\sqrt{x}-۲\sqrt{۳a} = \frac{(x-۳a)^۳}{\sqrt{۳a}+\sqrt{x}}$$

$$\Rightarrow \cancel{\frac{\frac{(x-۳a)^۳}{\sqrt{۳a}+\sqrt{x}}+۲\sqrt{x-۳a}}{\sqrt{(x+۳a)(x-۳a)}}} \Rightarrow \frac{(\sqrt{\cancel{x-۳a}})\left(\frac{(\sqrt{x-۳a})^۳}{\sqrt{۳a}+\sqrt{x}}\right)}{\sqrt{(x+۳a)(\cancel{x-۳a})}} \Rightarrow \frac{۲}{\sqrt{\ }}$$

$$\lim_{x\to -۱} \frac{۱-k[x]}{x^۲-۱} = -\infty$$

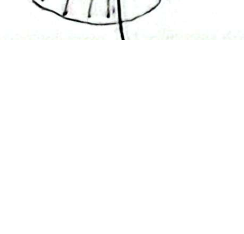
$$x\to -۱^+ \quad \frac{۱+k}{۰^-} = -\infty \Rightarrow k+۱>۰ \Rightarrow k>-۱$$

$$x\to -۱^- \quad \frac{۱+۲k}{۰^+} = -\infty \Rightarrow ۲k+۱<۰ \Rightarrow ۲k<-۱ \Rightarrow k<-\frac{۱}{۲}$$

$$\Rightarrow -۱<k<-\frac{۱}{۲}$$

$k\pi$

$\cos\pi = -۱$



$\cos\frac{\pi}{۲} = ۰$