نام و نام خانوادگی ......آیسا برسین............... پاسخنامه تشریحی تکلیف شماره ..۱۹... کلاس ..[illegible].......

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$$\lim_{x\to(-2)^+} f(x) = \lim_{x\to(-2)^-} f(x) \Rightarrow 2+0 = 4-a \qquad a=2$$

$$\left[\frac{a}{3}\right] = \left[\frac{2}{3}\right] = 0$$

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$$\lim_{x\to\left(\frac{\pi}{6}\right)^-} [2\sin x - 1] = \left[2\left(\frac{1}{2}\right)^- - 1\right] = [1^- - 1] = [0^-] = -1$$

$$\sin\left(\frac{\pi}{6}\right)^- = \frac{1}{2}^-$$

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$$\lim_{x\to -\frac{1}{2}} [8x^3 - x]$$

چون داخل براکت عدد صحیح نمی‌شود نیازی به دوشاخه کردن نیست!

$$\left[8\left(-\frac{1}{8}\right) \overset{+}{\cancel{-}} \left(-\frac{1}{2}\right)\right] = \left[-1 + \frac{1}{2}\right] = \left[-\frac{1}{2}\right] = -1$$

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$$x < -\frac{1}{2} \to x^2 > \frac{1}{4} \to -x^2 < -\frac{1}{4} \to \frac{-1}{x^2} > -4 \to \frac{-2}{x^2} > -8 \to \left[\frac{-2}{x^2}\right] = -8$$

$$\to x^2 > \frac{1}{4} \to \frac{1}{x^2} < 4 \to \frac{3}{x^2} < 12 \to \left[\frac{3}{x^2}\right] = 11$$

$$\lim_{x\to\left(-\frac{1}{2}\right)^-} \frac{10x - 7 + 11}{16x + 8} = \lim_{x\to\left(-\frac{1}{2}\right)^-} \frac{10x+4}{16x+8} = \frac{-4}{0^-} = +\infty$$

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$$\lim_{x\to1^+} \frac{\sin^2 \pi x}{[x] + \cos \pi x} = \lim_{x\to1^+} \frac{1-\cos^2 \pi x}{1+\cos \pi x} = \lim_{x\to1^+} 1 - \cos \pi x = 1 \overset{+}{\cancel{-}}(-1) = 2$$

$$\lim_{x\to -1}\frac{\sqrt{2x+3}-\sqrt{3x+4}}{1+\sqrt[3]{x}}\times\frac{\overset{3}{\text{فیل مخرج}}}{\text{فیل مخرج}}\times\frac{\text{مزدوج صورت}}{\underset{2}{\text{مزدوج صورت}}}=\lim_{x\to -1}\frac{2x+3-3x-4}{x+1}\times\frac{3}{2}$$ ۶

$$=\lim_{x\to -1}\frac{-\cancel{(x+1)}}{\cancel{x+1}}\times\frac{3}{2}=-\frac{3}{2}$$

$$\lim_{x\to 1}\frac{2x-7\sqrt{x}+5}{2x-\sqrt{3x+1}}\xrightarrow{hop}\lim_{x\to 1}\frac{2-\frac{7}{2\sqrt{x}}}{2-\frac{3}{2\sqrt{3x+1}}}=\frac{2-\frac{7}{2}}{2-\frac{3}{4}}=-\frac{6}{5}$$ ۷

$$\lim_{x\to 0}\frac{a+\sqrt{bx+c}}{x}=\frac{1}{4}\xrightarrow{hop}\lim\frac{\frac{b}{2\sqrt{bx+c}}}{1}=\frac{1}{4}\rightarrow 4b=2\sqrt{c}$$

$$2b=\sqrt{c}\rightarrow \boxed{c=4b^2}$$ ۸

$$\text{می‌دانیم}\longrightarrow a+\sqrt{c}=0\xrightarrow{\sqrt{c}=2b}\boxed{a=-2b}\qquad \frac{ab}{c}=\frac{-2\cancel{b}\times\cancel{b}}{4\cancel{b^2}}=-\frac{1}{2}$$

$$\lim_{x\to -2\pi}\frac{4+k\left[\frac{x}{\pi}\right]}{\sin x}=+\infty\qquad \xrightarrow{(-2\pi)^-}\left[\frac{x}{\pi}\right]=-3\rightarrow\frac{4-3k}{\underset{0^-}{\sin x}}$$

$$\xrightarrow{(-2\pi)^+}\left[\frac{x}{\pi}\right]=-2\rightarrow\frac{4-2k}{\underset{0^+}{\sin x}}$$

$$\Rightarrow\left.\begin{array}{l}4-3k<0\rightarrow k>\frac{4}{3}\rightarrow -k<-\frac{4}{3}\\ 4-2k>0\rightarrow k<2\rightarrow -k>-2\end{array}\right\}\ [-k]=-2$$ ۹

$$8a=b\rightarrow\frac{b}{a}=8$$

$$\lim_{x\to 8}\frac{b\sqrt{2+\sqrt[3]{x}}-2b}{ax-b}=\lim_{x\to 8}\frac{b\left(\sqrt{2+\sqrt[3]{x}}-2\right)}{a\left(x-\frac{b}{a}\right)}\times\frac{\text{مص}}{\underset{4}{\text{مص}}}$$ ۱۰

$$=\frac{(\overbrace{2+\sqrt[3]{x}-4}^{\sqrt[3]{x}-2})b}{4a(x-8)}\times\frac{\text{فص}}{\underset{6}{\text{فص}}}=\frac{\cancel{(x-8)}b}{24a\cancel{(x-8)}}=\frac{b}{a}\times\frac{1}{24}=\frac{8}{24}=\frac{1}{3}$$