نام و نام خانوادگی ...... پاسخنامه تشریحی تکلیف شماره 19 کلاس دوازدهم ریاضی ۸

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$$\lim_{x\to -2} f(x) \begin{cases} \xrightarrow{-2^+} 2[2^-]+a[0^+]=2 \\ \xrightarrow{-2^-} 2[2^+]+a[0^-]=4-a \end{cases} \Rightarrow 4-a=2 \Rightarrow a=2$$

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

$\boxed{\text{جواب} = 0}$

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$$\lim_{x\to \frac{\pi}{6}^-}[2\sin x-1] \Rightarrow x\to \frac{\pi}{6}^- \Rightarrow \sin x \Rightarrow \frac{1}{2}^-$$

$$\Rightarrow \lim_{x\to \frac{\pi}{6}^-}[2\sin x-1] = [1^- -1] = [0^-] = \boxed{-1}$$

$\boxed{\text{جواب} = -1}$

$\boxed{\text{جواب} = -1}$

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$$\lim_{x\to -\frac{1}{2}}[8x^3-x] = \left[\left(8\times\frac{-1}{8}\right)-\left(-\frac{1}{2}\right)\right] = \left[-1+\frac{1}{2}\right] = [-0.5]$$

$$\boxed{=-1}$$

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(۱) $x<-\frac{1}{2} \Rightarrow \frac{1}{x}>-2 \Rightarrow \frac{1}{x^2}<4 \Rightarrow \frac{3}{x^2}<12$

(۲) $\frac{1}{x^2}<4 \Rightarrow \frac{-2}{x^2}>-8$

$$\Rightarrow \lim_{x\to -\frac{1}{2}^-} f(x) = \frac{10x-5+11}{16x-(-8)} = \frac{10x+6}{16x+8} = \frac{-5+6}{-8+8} = \frac{1}{0^-}$$

$$\boxed{=-\infty}$$

$\boxed{\text{جواب} = -\infty}$

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

$$=\lim_{x\to 1^+} 1-\cos\pi x = \boxed{2}$$

$\boxed{\text{جواب} = 2}$

$$\lim_{x\to -1}\frac{\sqrt{2x+3}-\sqrt{3x+4}}{1+\sqrt[3]{x}} \xRightarrow{\frac{0}{0}} \lim_{x\to -1}\frac{\sqrt{2x+3}-\sqrt{3x+4}}{1+\sqrt[3]{x}}\times\frac{\text{مص}}{\text{مص}}\times\frac{\text{فم}}{\text{فم}} = \lim_{x\to -1}\frac{-(x+1)\times\text{فم}}{(x+1)\times\text{مص}}$$

$$=\boxed{-\frac{3}{2}}$$ ۶

جواب $=\frac{-3}{2}$

$$\lim_{x\to 1}\frac{2x-7\sqrt{x}+5}{2x-\sqrt{3x+1}} \xRightarrow[\text{hop}]{\frac{0}{0}} \lim_{x\to 1}\frac{2-\frac{7}{2\sqrt{x}}}{2-\frac{3}{2\sqrt{3x+1}}} = \frac{2-\frac{7}{2}}{2-\frac{3}{4}} = \frac{-\frac{3}{2}}{\frac{5}{4}} = \boxed{\frac{-6}{5}}$$ ۷

جواب $=\frac{-6}{5}$

$$\lim_{x\to 0}\frac{a+\sqrt{bx+c}}{x} \Rightarrow \frac{0}{0} \Rightarrow a+\sqrt{c}=0 \Rightarrow \boxed{a=-\sqrt{c}}$$

$$\xRightarrow[\text{hop}]{} \lim_{x\to 0}\frac{b}{2\sqrt{bx+c}} = \frac{1}{\cancel{4}\,2} \Rightarrow \frac{b}{\sqrt{c}}=\frac{1}{2} \Rightarrow \boxed{b=\frac{\sqrt{c}}{2}} \Rightarrow$$ ۸

$$\frac{ab}{c} = \frac{-\sqrt{c}\times\frac{\sqrt{c}}{2}}{c} = \frac{-\frac{c}{2}}{c} = \boxed{-\frac{1}{2}}$$

جواب $=\frac{-1}{2}$

$$\lim_{x\to -2\pi} f(x) \begin{cases} \xrightarrow{-2\pi^+} \dfrac{4+k[-2^+]}{0^+} = +\infty \Rightarrow 4-2k>0 \Rightarrow 2k<4 \Rightarrow k<2 \\ \xrightarrow{-2\pi^-} \dfrac{4+k[-2^-]}{0^-} = +\infty \Rightarrow 4-3k<0 \Rightarrow 3k>4 \Rightarrow k>\frac{4}{3} \end{cases}$$

$$\Rightarrow \frac{4}{3}<k<2 \Rightarrow [-k] = \left[-\frac{4}{3}>-k>-2\right] = \boxed{-2}$$ ۹

جواب $=-2$

$$\lim_{x\to 8}\frac{b\sqrt{2+\sqrt[3]{x}}-2b}{ax-b} \Rightarrow \frac{0}{0} \Rightarrow 8a-b=0 \Rightarrow b=8a \Rightarrow a=\frac{1}{8}b$$

$$\xRightarrow[\text{hop}]{} \lim_{x\to 8}\frac{b\times\left(\frac{1}{3}x^{-\frac{2}{3}}\right)\left(\frac{1}{2\sqrt{2+\sqrt[3]{x}}}\right)}{a} = \frac{\cancel{b}\times\left(\frac{1}{3}x^{-\frac{2}{3}}\right)\left(\frac{1}{2\sqrt{2+\sqrt[3]{x}}}\right)}{\frac{1}{8}\cancel{b}} = \frac{\frac{1}{12}\times\frac{1}{4}}{\frac{1}{8}} = \frac{\frac{1}{48}}{\frac{1}{8}}$$ ۱۰

$$=\boxed{\frac{1}{6}}$$

جواب $=\frac{1}{6}$