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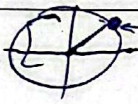
نام و نام خانوادگی ....[illegible]........ پاسخنامه تشریحی تکلیف شماره ..۱۹.. کلاس ....۱۲A.......

$x \to -2$: $\xrightarrow{-} 2\left[\frac{2-(-2)}{3}\right] + a\left[\frac{-2^- + 2}{3}\right] = 4 - a$; $\xrightarrow{+} 2\left[\frac{2-(-2)}{3}\right] + a\left[\frac{-2^+ + 2}{3}\right] = 2$ $\Rightarrow 4 - a = 2 \Rightarrow a = 2$ $\left[\frac{a}{3}\right] = \left[\frac{2}{3}\right] = 0$ ✓ (۲)	۱
$\lim_{x \to \frac{\pi}{6}^-} [2\sin x - 1] \Rightarrow$  $\frac{\pi}{6}^- \Rightarrow 2\sin\frac{\pi}{6}^- = 1^- \Rightarrow [1^- - 1] = [0^-] = -1$ ✓ (۲)	۲
$\lim_{x \to -\frac{1}{2}} [8x^3 - x] \Rightarrow x \Rightarrow -\frac{1}{2} \Rightarrow \left[8 \times \frac{-1}{8} - \left(\frac{-1}{2}\right)\right] = \left[\frac{-1}{2}\right] \Rightarrow -1$ ✓ (۲)	۳
$\lim_{x \to -\frac{1}{4}^-} \frac{10x - 5 + \left[\frac{3}{x^2}\right]}{16x - \left[\frac{-2}{x^2}\right]} \Rightarrow$ $\left[\frac{3}{\frac{1}{4}^+}\right] = [3 \times 4^-] = 11$; $\left[\frac{-2}{\frac{1}{4}^+}\right] = [-2 \times 4^-] = -8$ $\Rightarrow \frac{10x + 6}{16x + 8} \xrightarrow{x \to -\frac{1}{4}^-} \frac{+1}{0^-} = -\infty$ ✓ (۲)	۴
$\lim \frac{\sin^2 \pi x}{[x] + \cos \pi x} \Rightarrow \frac{\sin^2 \pi x}{1 + \cos \pi x} \Rightarrow \frac{1 - \cos^2 \pi x}{1 + \cos \pi x} \Rightarrow \frac{(1 - \cos \pi x)(1 + \cos \pi x)}{1 + \cos \pi x} = 1 - \cos \pi x \Rightarrow$ $x \Rightarrow 1^+ \Rightarrow 1 - (-1) = 2$ ✓ (۲)	۵

$(-x-1) = -(x+1)$ $\lim_{x\to -1} \frac{\sqrt{2x+3}-\sqrt{3x+4}}{1+\sqrt[3]{x}} \times \frac{\sqrt{2x+3}+\sqrt{3x+4}}{\sqrt{2x+3}+\sqrt{3x+4}} \times \frac{(1-\sqrt[3]{x}+\sqrt[3]{x^2})}{(1-\sqrt[3]{x}+\sqrt[3]{x^2})} \Rightarrow \frac{(2x+3)-(3x+4)(1-\sqrt[3]{x}+\sqrt[3]{x^2})}{(1+x)(\sqrt{2x+3}+\sqrt{3x+4})}$ $\Rightarrow x \Rightarrow -1 \Rightarrow \frac{(-1)(3)}{2} \Rightarrow \frac{-3}{2}$ ✓ ۲	۶
$\lim_{x\to 1} \frac{2x-7\sqrt{x}+5}{3x-\sqrt{3x+1}} \Rightarrow$ هوپیتال $\Rightarrow \frac{2-7(\frac{1}{2\sqrt{x}})}{3-3(\frac{3}{2\sqrt{3x+1}})} \xRightarrow{x=1} \Rightarrow \frac{\frac{-3}{2}}{\frac{5}{4}} = \frac{-3}{10}$ $\frac{-6}{5}$ ✓ ۲	۷
$\lim_{x\to 0} \frac{a+\sqrt{bx+c}}{x} = \frac{1}{4} \Rightarrow$ هوپیتال $\Rightarrow \frac{\frac{b}{2\sqrt{bx+c}}}{1} \xRightarrow{x=0} \frac{b}{2\sqrt{c}} = \frac{1}{4} \Rightarrow \frac{1}{2} = \frac{b}{\sqrt{c}}$ (1) $\hookrightarrow x \Rightarrow 0 \Rightarrow a+\sqrt{c}=0 \Rightarrow \sqrt{c}=-a$ (2) (1),(2) $\Rightarrow \frac{b}{-a} = \frac{1}{2}$ / $\frac{ab}{c} \Rightarrow \frac{a\times\frac{-a}{2}}{a^2} \Rightarrow$ $\frac{ab}{c} = \frac{-1}{2}$ ✓ ۲	۸
$\lim_{x\to -2\pi} \frac{4+k[\frac{x}{\pi}]}{\sin x} = +\infty \Rightarrow$ $2^+ \Rightarrow \frac{4+k[-2^+]}{\sin x^+} \Rightarrow \frac{4-2k}{0^+} = +\infty$; $- \Rightarrow \frac{4+k[-2^-]}{\sin x} \Rightarrow \frac{4-3k}{0^-} = +\infty$ $\} \Rightarrow$ $4-2k>0 \Rightarrow k<2$ (1) / $4-3k<0 \Rightarrow k>\frac{4}{3}$ (2) / $\frac{4}{3}<k<2 \Rightarrow$ $-2 = [-k]$ ✓ ۲	۹
$\lim_{x\to 8} \frac{b\sqrt{2+\sqrt[3]{x}}-2b}{ax-b} \Rightarrow$ هوپیتال $\Rightarrow \frac{\frac{b(2+\sqrt[3]{x})}{2\sqrt{2+\sqrt[3]{x}}}}{a} \xRightarrow{x\to 8} \frac{\frac{2b}{4}}{a} = \frac{b}{a}$ (1) $\hookrightarrow 8a-b=0 \Rightarrow b=8a$ (2) $\Rightarrow$ (1),(2) $\Rightarrow \frac{8a}{a} = \frac{8}{2}$ ۱	۱۰

$8a-b=0 \to b=8a$

$\lim_{x\to 8} \frac{8a(\sqrt{2+\sqrt[3]{x}}-2)}{ax-8a} = \frac{8a(\sqrt{2+\sqrt[3]{x}}-2)}{ax-8a} \times \frac{\sqrt{2+\sqrt[3]{x}}+2}{\sqrt{2+\sqrt[3]{x}}+2} =$

$\lim_{x\to 8} \frac{8a(\sqrt[3]{x}-2)}{a(x-8)\times 4} \to \lim_{x\to 8} \frac{2(\sqrt[3]{x}-2)}{(\sqrt[3]{x}-2)(\sqrt[3]{x^2}+4+2\sqrt[3]{x})} = \frac{2}{12} = \frac{1}{6}$