نام و نام خانوادگی: مهدی رحیمی پور — پاسخنامه تشریحی تکلیف شماره 19 — کلاس دوازدهم ریاضی 13

$$\lim_{x\to -2} -2\left[\frac{2-x}{2}\right]+a\left[\frac{x+2}{4}\right] = \begin{cases} -2^+ \to +2\left[\frac{2+2^-}{2}\right]+a\left[\frac{-2^++2}{3}\right] = +2\times 1 + 0 = -2 \\ -2^- \to +2\left[\frac{2+2^+}{2}\right]+a\left[\frac{-2^-+2}{4}\right] = +2\times 2 - a = +4-a \end{cases} \quad +2=+4-a \to \underline{a=+2}$$ 1

$$\to \left[\frac{a}{4}\right]=\left[\frac{2}{4}\right]=\cancel{1} \to$$ صفر

$$\lim_{x\to \left(\frac{\pi}{4}\right)^-}[\sqrt{2}\sin x-1] = \lim[+1^- -1] = \lim[0^-] = -1$$ 2

$$\lim_{x\to -\frac{1}{2}}[8x^3-x] \xrightarrow{\text{جایگذاری}} \lim\left[8\times -\frac{1}{8}+\frac{1}{2}\right] = \lim\left[-1+\frac{1}{2}\right] = \lim\left[-\frac{1}{2}\right] = -1$$ 3

$\to \frac{1}{x^2} \to$ صعودی * , $-\frac{1}{x^2} \to$ نزولی ** $\to \lim_{x\to\left(-\frac{1}{2}\right)^-} A \xrightarrow{\text{براکت‌ها}} \left[\frac{3}{x^2}\right] \overset{*}{=} [12^-]$, $\left[\frac{-2}{x^2}\right] \overset{**}{=} [-8^+]$ 4

$$\to \lim A = \lim_{x\to\left(-\frac{1}{2}\right)^-} \frac{10x+6}{16x+8} = \frac{-5^-+6}{-8^-+8} = \frac{1}{0^-} = -\infty$$

$$\lim_{x\to 1^+} \frac{\sin^2 \pi x}{[x]+\cos \pi x} = \frac{1-\cos^2 \pi x}{1+\cos \pi x} = 1-\cos \pi x = 1-\cos \pi x = 1+1 = 2$$ 5

$$\lim_{x\to -1}\frac{\sqrt{2x+3}-\sqrt{3x+4}}{1+\sqrt[3]{x}}=\frac{0}{0}\to\frac{\sqrt{2x+3}-\sqrt{3x+4}}{1+\sqrt[3]{x}}\times\frac{\cancel{2}}{2}\times\frac{\cancel{3}}{\cancel{3}}=\frac{-1}{1}\times\frac{1}{1+1}\times\frac{1+1+1}{1}=-\frac{3}{2}$$

مشتق

$$\text{یا } hop\to\frac{\frac{2}{2\times1}-\frac{3}{2\times1}}{\frac{1}{3\times1}}=\frac{\frac{-1}{2}}{\frac{1}{3}}=-\frac{3}{2}$$

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$$\lim_{x\to 1}A=\frac{0}{0}\xrightarrow{hop}\frac{2-\frac{7}{2\times1}}{2-\frac{3}{2\times2}}=\frac{2-\frac{7}{2}}{2-\frac{3}{4}}=\frac{8-14}{8-3}=\frac{-6}{5}=-1.2$$

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مخرج ۰ وجود $\neq\pm\infty$ $\to\frac{0}{0}\to a+\sqrt{c}=0 \to a=-\sqrt{c}$ و $\to hop\to\frac{b}{2\sqrt{bx+c}}=\frac{1}{4}\to 2b=\sqrt{c}$

$$\to\frac{ab}{c}=\frac{(-\sqrt{c})\times(\frac{\sqrt{c}}{2})}{c}=\frac{-\frac{c}{2}}{c}=-\frac{1}{2}$$

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$-2\pi^+\to\frac{4+k[\frac{x}{\pi}]}{0^+}=\frac{4-2k}{0^+}=+\infty\to 4-2k>0\to k<2$

$-2\pi^-\to\frac{4+k[\frac{x}{\pi}]}{0^-}=\frac{4-3k}{0^-}=+\infty\to 4-3k<0\to k>\frac{4}{3}$

$[-k]=-2$

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→ حد = صفر → مقدار غیرصفر → مخرج صفر → $8a-b=0\to b=8a$

$$\xrightarrow{hop}\frac{b\left(\frac{\frac{1}{3\times4}}{2\times2}\right)}{a(1)}=\frac{8a\left(\frac{1}{48}\right)}{a}=\frac{1}{6}$$

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