

نام و نام خانوادگی تاریخ / ماه / سال پاسخنامه تشریحی تکلیف شماره ۱۹ کلاس دوازدهم ریاضی A

$$\begin{aligned} & \begin{cases} -2^+ \Rightarrow 2 \left(\frac{2^+}{2} \right) + a \left(\frac{(-2^+)+2}{2} \right) = 2 \\ -2^- \Rightarrow 2 \left(\frac{2^-}{2} \right) + a \left(\frac{(-2^-)+2}{2} \right) = 2-a \end{cases} \quad a=2 \\ & \left(\frac{a}{2} \right) = \left(\frac{2}{2} \right) = 1 \end{aligned}$$

$$\lim_{x \rightarrow \frac{\pi}{4}^-} (2 \sin x - 1) = (2 - 1) = 1$$

$$\hookrightarrow 2 \cos x = 2 \cos \frac{\pi}{4} = \sqrt{2}$$

$$\lim_{x \rightarrow -\frac{1}{2}^+} (x^2 - x) = \left(\frac{1}{4} - \frac{1}{2} \right) = \left(-\frac{1}{4} \right) = -\frac{1}{4}$$

$$\hookrightarrow x^2 - 1 = 0$$

$$\lim_{x \rightarrow -\frac{1}{2}^+} \frac{10x - 1 + \left(\frac{x}{x^2} \right)}{14x - \left(-\frac{x}{x^2} \right)} = \frac{-10 + (-2)}{-14 - (-2)} = \frac{-12}{-12} = 1$$

$$\lim_{x \rightarrow 1^+} \frac{\sin^2 \pi x}{x^2 + \cos \pi x} = \frac{1 - \cos^2 \pi x}{1 + \cos \pi x} = 1 - \cos \pi x = 2$$

$$\lim_{x \rightarrow -1} \frac{\sqrt{2x+3} - \sqrt{2x+5}}{1 + \sqrt{x}} \stackrel{\frac{0}{0}}{\underset{H.o.P}{\Rightarrow}} \frac{\frac{x}{\sqrt{2x+3}} - \frac{x}{\sqrt{2x+5}}}{\frac{1}{\sqrt{x+1}}} = -\frac{x}{y}$$

6

$$\lim_{x \rightarrow 1} \frac{x - \sqrt{\sqrt{x}+2}}{x - \sqrt{x+1}} \stackrel{\frac{0}{0}}{\underset{H.o.P}{\Rightarrow}} \frac{1 - \frac{1}{\sqrt{2}}}{1 - \frac{1}{\sqrt{2}}} = -\frac{y}{\omega}$$

7

$$\lim_{n \rightarrow \infty} \frac{a + \sqrt{bn+c}}{n} = \frac{1}{c} \rightarrow \begin{aligned} &\frac{a + \sqrt{c}}{\infty} = 0 \\ &a + \sqrt{c} = 0 \\ &a = -\sqrt{c} \end{aligned}$$

$$\stackrel{H.o.P}{\Rightarrow} \frac{b}{\sqrt{bn+c}} = \frac{b}{\sqrt{c}} = \frac{1}{\sqrt{c}} = \frac{b\sqrt{c}}{c} = \frac{1}{c}$$

$$-\frac{ab}{c} = \frac{1}{c} \Rightarrow \frac{ab}{c} = -\frac{1}{c}$$

8

$$\lim_{x \rightarrow -\pi} \frac{x + k(\frac{\pi}{x})}{\sin x}$$

$x \rightarrow -\pi^+ \Rightarrow \frac{x - \pi k}{0^+} = +\infty$

$x \rightarrow -\pi^- \Rightarrow \frac{x - \pi k}{0^-} = +\infty$

$x - \pi k > 0$

$k < \pi$

$x - \pi k < 0$

$\frac{x}{\pi} < k$

$\Rightarrow \frac{x}{\pi} < k < \pi \Rightarrow -\frac{x}{\pi} > -k > -\pi \Rightarrow [-k] = -\pi$

9

$$\lim_{x \rightarrow \infty} \frac{b\sqrt{2+\sqrt{x}} - \pi b}{ax - b}$$

$ax - b = 0 \Rightarrow a = \frac{b}{x}$

$\stackrel{H.o.P}{\Rightarrow} \frac{b \times \frac{1}{\sqrt{2+\sqrt{x}}}}{\frac{b}{x}} = \frac{b \times \frac{1}{x}}{\frac{b}{x}} = \frac{1}{4}$

این حد را می توانیم با روش ل'Hopital حل کنیم

10