

نام و نام خانوادگی: ... ریاضی ... ۵۰ ... پاسخنامه تشریحی تکلیف شماره ۱۹ ... کلاس دریا زینب دخت ... A

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

$a = 2$ ✓
 $\left(\frac{a}{2} \right) = \left(\frac{2}{2} \right) = 1$ ✓

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

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

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

$2x^2 - 1 = 0$ ✓

$$\lim_{x \rightarrow -\frac{1}{2}} \frac{10x - 12 + \left(\frac{x}{x^2} \right)}{14x - \left(-\frac{2}{x^2} \right)} = \frac{-10 + (-12)}{-14 - (-2)} = \frac{-22}{-12} = \frac{11}{6}$$

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

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

(2)

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

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$$\lim_{n \rightarrow \infty} \frac{a + \sqrt{bn+c}}{n} = \frac{1}{c} \rightarrow \frac{a + \sqrt{c}}{\infty} = 0 \Rightarrow a + \sqrt{c} = 0 \Rightarrow a = -\sqrt{c}$$

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

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

(2)

$$\lim_{x \rightarrow -\pi} \frac{x + k(\frac{\pi}{x})}{\sin x} \xrightarrow{-\pi^+} \frac{x - \pi k}{0^+} = +\infty$$

$$x - \pi k > 0$$

$$k < \pi$$

$$x - \pi k < 0$$

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

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

$$\frac{x}{\pi} < k \Rightarrow \frac{x}{\pi} - k < 0 \Rightarrow \frac{x}{\pi} - k > -\pi \Rightarrow [-k] = -\pi$$

(2)

$$\lim_{x \rightarrow \infty} \frac{b\sqrt{x+3} - \pi b}{ax - b}$$

$$ax - b$$

$$ax - b = 0$$

$$a = \frac{b}{\lambda}$$

(H.o.P)

$$b \times \frac{1}{\sqrt{x+3}}$$

$$\sqrt{x+3}$$

$$\frac{b}{\lambda}$$

$$\frac{b \times \frac{1}{\lambda}}{\frac{b}{\lambda}} = \frac{1}{\lambda}$$

(2)

1.