نام و نام خانوادگی ..... عرفان عبدالهی ..... پاسخنامه تشریحی تکلیف شماره ..... 19 ..... کلاس ..... دوازدهم تجربی A .....

$$f(x) = 2\left[\frac{2-x}{2}\right] + a\left[\frac{x+2}{3}\right]$$

$$\lim_{x \to 2^+} f(x) = 2[2^-] + a[0^+] = 2$$

$$\lim_{x \to 2^-} f(x) = 2[2^+] + a[0^-] = 4 - a \rightarrow 2 = 4 - a \rightarrow a = 2$$

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

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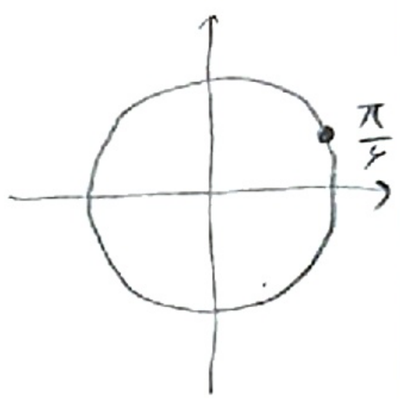
$$\lim_{x \to (\frac{\pi}{6})^-} [2\sin x - 1] = [2(\frac{1}{2})^- - 1] = [0^-] = -1$$



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$$\lim [12x^2 - x] = -1$$

$x \to -\frac{1}{2}$

$f'(x) = 24x^2 - 1$

$f'(-\frac{1}{2}) < 0$

$$\lim_{x \to -\frac{1}{2}^+} [12x^2 - x] = [-\frac{1}{2}^+] = -1$$

$$\lim_{x \to -\frac{1}{2}^-} [18x^2 - x] = [-\frac{1}{2}^-] = -1$$

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$$\lim_{x \to (-\frac{1}{2})^-} \frac{10x - 8 + [\frac{3}{x^2}]}{14x - [-\frac{2}{x^2}]} = \frac{10x - 8 + [12^-]}{14x - [-1^+]} = \frac{10x - 8 + 11^+}{14x + 1} = \frac{+1}{0^-} = -\infty$$

$x < -\frac{1}{2} \rightarrow x^2 > \frac{1}{4} \rightarrow \frac{1}{x^2} < 4$

$\frac{3}{x^2} < 12$

$-\frac{2}{x^2} > -10$

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$$\lim_{x \to 1^+} \frac{\sin^2 \pi x}{[x] + \cos \pi x} = \frac{\sin^2 \pi x}{1 + \cos \pi x} = \frac{0}{0} \xrightarrow{H\circ P} \frac{2 \times \sin \pi x \times \pi \times \cos \pi x}{-\sin \pi x \times \pi}$$

$= -2\cos \pi x = -2 \times -1 = 2$

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

$$\frac{1 - \frac{3}{2}}{\frac{1}{3}} = -\frac{3}{2}$$

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$$\lim \frac{2x - \sqrt{x} + 8}{2x - \sqrt{2x+1}} = \frac{0}{0} \xrightarrow{\text{HOP}} \frac{2 - 7\times\frac{1}{2\times 1}}{2 - \frac{3}{2\times 2}}$$

$$\frac{-\frac{3}{4}}{\frac{3}{4}} = -\frac{6}{3}$$

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$$\lim_{x \to 0} \frac{a + \sqrt{bx+c}}{x} = \frac{1}{4}$$

$$a + \sqrt{c} = 0$$
$$\sqrt{c} = -a$$

$$\lim_{x \to 0} \frac{a + \sqrt{bx+c}}{x} = \frac{0}{0} \xrightarrow{\text{HOP}} = \frac{\frac{b}{2\times\sqrt{c}}}{1} = -\frac{b}{2a} = \frac{1}{4}$$

$$a = -2b \longrightarrow \frac{ab}{c} = \frac{a\times -\frac{a}{2}}{a^2} = -\frac{1}{2}$$
$$c = a^2$$

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$$\lim_{x \to -2\pi} \frac{4 + K\left[\frac{x}{\pi}\right]}{\sin x} = +\infty$$

$$x \to -2\pi^+ \quad -2\pi^+ = \frac{4 + K[-2^+]}{0^+} = +\infty$$

$$x \to -2\pi^- \quad -2\pi^- = \frac{4 + K[-2^-]}{0^-} \to +\infty$$

$$4 + K(-2) > 0 \longrightarrow 4 > 2K \longrightarrow 2 > K$$

$$4 + K(-3) < 0 \longrightarrow 4 < 3K \longrightarrow \frac{4}{3} < K$$

$$\frac{4}{3} < K < 2 \longrightarrow [K] = 1$$

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$$\lim_{x \to 1} \frac{b\sqrt{2+\sqrt[3]{x}} - 2b}{ax - b} = \frac{2b - 2b}{a - b} = \frac{0}{0} \xrightarrow{\text{HOP}} \frac{b\times\frac{1}{2\times 4}}{2\times 2} = \frac{1}{12\times 4} \times 1$$

$$a - b = 0 \longrightarrow a = \frac{1}{8}b$$

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