محمد عماد عوریا ـ ل / دوازدهم تجربی A

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$x \to 2^+ \rightsquigarrow 2[2^-] + a[0^+] = 1$

$x \to 2^- \rightsquigarrow 2[2^+] + a[0^-] = 4 - a$

$\Rightarrow 1 = 4 - a \to a = 3$

$\rightsquigarrow \left[\frac{a}{3}\right] = \left[\frac{3}{3}\right] = \boxed{1}$

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$\lim\limits_{x \to (\frac{\pi}{4})^-} [2\tan x] - 1 = [1^-] - 1 = \boxed{-1}$

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$\lim\limits_{x \to -\frac{1}{2}} [8x^3 - x] = [x(8x^2 - 1)]$

$0 \qquad x = \pm \frac{1}{2\sqrt{2}} = \pm \frac{\sqrt{2}}{4}$

$-\frac{\sqrt{2}}{4} \quad 0 \quad \frac{\sqrt{2}}{4}$

$- \quad + \quad - \quad +$

$\rightsquigarrow [0^+] = \boxed{0}$

$\rightsquigarrow [0^-] = \boxed{-1}$

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$\lim\limits_{x \to (-\frac{1}{2})^-} \frac{10x - 5 + \left[\frac{3}{x^2}\right]}{16x - \left[-\frac{2}{x^2}\right]} = \frac{-5 - 5 + [12^+]}{-8 - [-8^-]}$ ($[-8^-] = -9$)

$= \frac{2}{1} = \boxed{2}$

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$\lim\limits_{x \to 1^+} \frac{\sin^2 \pi x}{[x] + \cos \pi x} = \frac{\sin^2 \pi x}{1 + \cos \pi x}$

$= \frac{1 - \cos^2 \pi x}{1 + \cos \pi x} = \frac{(1 - \cos \pi x)(1 + \cos \pi x)}{1 + \cos \pi x}$

$= 1 - \cos \pi x = 1 - (-1) = \boxed{2}$

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$\lim\limits_{x \to -1} \frac{\sqrt{2x+3} - \sqrt{3x+4}}{1 + \sqrt[3]{x}}$

$Hop = \frac{\frac{1}{\sqrt{2x+3}} - \frac{3}{2\sqrt{3x+4}}}{\frac{1}{3}\left(\sqrt[3]{(\frac{1}{x})^2}\right)} = \frac{1 - \frac{3}{2}}{\frac{1}{3}} = \frac{-\frac{1}{2}}{\frac{1}{3}}$

$= -\frac{3}{2} = \boxed{-1.5}$

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$\lim\limits_{x \to 1} \frac{2x - 7\sqrt{x} + 5}{2x - \sqrt{3x+1}}$

$Hop = \frac{2 - \frac{7}{2\sqrt{x}}}{2 - \frac{3}{2\sqrt{3x+1}}} = \frac{2 - \frac{7}{2}}{2 - \frac{3}{4}} = \frac{-\frac{3}{2}}{\frac{5}{4}} =$

$-\frac{6}{5} = \boxed{-1.2}$

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

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

$Hop = \frac{b}{2\sqrt{bx+c}} = \frac{1}{4} \rightsquigarrow \frac{b}{2\sqrt{c}} = \frac{1}{4}$

$x \to 0 \qquad \Rightarrow 4b = 2\sqrt{c} \to b = \frac{\sqrt{c}}{2}$

$\rightsquigarrow \frac{ab}{c} = \frac{(-\sqrt{c})(\frac{\sqrt{c}}{2})}{c} = \frac{-c}{2c} = \boxed{-\frac{1}{2}}$

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$\lim\limits_{x \to -2\pi} \frac{4 + k\left[\frac{x}{\pi}\right]}{\sin x} = +\infty$

$\to -2\pi^+ \rightsquigarrow \frac{4 + k[-2^+]}{0^-} = \frac{4 - 2k}{0^-}$

$\hookrightarrow -2\pi^- \rightsquigarrow \frac{4 + k[-2^-]}{0^+} = \frac{4 - 3k}{0^+}$

$2k - 4 = 4 - 3k \rightsquigarrow 5k = 8 \to k = \frac{8}{5} = 1.6$

$\to [-k] = [-1.6] = \boxed{-2}$

$$\lim_{x\to 1} \frac{b\sqrt{2+\sqrt[3]{x}} - 2b}{ax-b}$$

$x \to 1$

$\Downarrow$

$1a - b = 0 \to b = 1a$

Hôp: $\lim_{x\to 1} \frac{\frac{b}{3\sqrt[3]{x^2}}}{\frac{2\sqrt{2+\sqrt[3]{x}}}{a}} = \frac{b}{6\sqrt{a}} \rightsquigarrow \frac{1a}{6\sqrt{a}} = \boxed{\frac{1}{4}}$