به نام خدا

پویا ملکیان

DATE / / SUBJECT:

① $-2^- \to f(x) = 4-a$

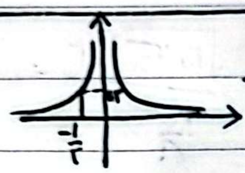
$-2^+ \to f(x) = 2+0$

$\to f(-2^-) = f(-2^+) \to 4-a=2 \to a=2 \to [\frac{2}{3}] = \boxed{0}$

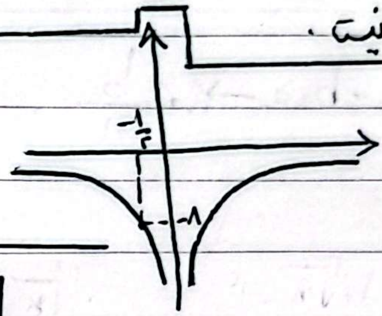
② $\sin\frac{\pi^-}{6} = \frac{1}{2}^- \to \lim_{x\to\frac{\pi}{6}^-}[2\sin x-1] = [0^-] = \boxed{-1}$

③ $\lim_{x\to-\frac{1}{2}}[8x^3-x] = [-1+\frac{1}{2}] = [-\frac{1}{2}] = \boxed{-1}$ با توجه به صحیح نبودن عبارت داخل براکت نیازی به جداسازی حدها نیست.

④ $y=\frac{3}{x^2}$



$\to \lim_{x\to(-\frac{1}{2})^-}[\frac{3}{x^2}] = 11$, $y=-\frac{2}{x^2}$



$\lim_{x\to(-\frac{1}{2})^-}[\frac{-2}{x^2}] = -8 \to \frac{10x-5+11}{16x+8} = \frac{+1}{0^-} = \boxed{-\infty}$

⑤ $\lim_{x\to1^+}\frac{\sin^2\pi x}{1+\cos\pi x} = \frac{(1-\cos\pi x)(1+\cos\pi x)}{1+\cos\pi x} = 1-\cos\pi x = \boxed{2}$

⑥ $\frac{0}{0} \to HOP \to \frac{\frac{2}{2\sqrt{2x+3}} - \frac{3}{2\sqrt{3x+4}}}{\frac{1}{3\sqrt[3]{x^2}}} = \frac{1-\frac{3}{2}}{\frac{1}{3}} = \frac{-\frac{1}{2}}{\frac{1}{3}} = \boxed{\frac{-3}{2}}$

⑦ $HOP \to \frac{2-\frac{7}{2\sqrt{x}}}{2-\frac{3}{2\sqrt{3x+1}}} = \frac{2-\frac{7}{2}}{2-\frac{3}{4}} = \frac{-\frac{3}{2}}{\frac{5}{4}} = \boxed{\frac{-6}{5}}$

⑧ ~~HOP~~ مخرج که صفر حد است پس صورت نیز باید صفر باشد تا حاصل حد عدد شود.

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

$\lim_{x\to0}\frac{a+\sqrt{bx+c}}{x} = \frac{1}{4} \to \frac{a^2-bx-c}{(x)(2a)} = \frac{-bx}{(x)(2a)} = \frac{-b}{2a} = \frac{1}{4} \to$

$\frac{b}{a} = \frac{-1}{2} \to b = \frac{-a}{2} = \frac{\sqrt{c}}{2} \to \frac{ab}{c} = \frac{-\sqrt{c}\times\frac{\sqrt{c}}{2}}{c} = \boxed{\frac{-1}{2}}$

پویا فلفلیان

DATE / / SUBJECT:

۹)

$(-۲\pi^+) \to \frac{۴-۲k}{\sin x} = \frac{۴-۲k}{0^+} = +\infty \to 0 < ۴-۲k \to k < ۲$

$(-۳\pi^-) \to \frac{۴-۳k}{\sin x} = \frac{۴-۳k}{0^-} = +\infty \to ۴-۳k < 0 \to \frac{۴}{۳} < k$

$-\frac{۴}{۳} > -k > -۲$

$\to [-k] = \boxed{-۲}$

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۱۰)

$۸a - b = 0 \to a = \frac{b}{۸} \to \lim_{x \to ۸} \frac{b(\sqrt{۲+\sqrt[۳]{x}}-۲)}{b(\frac{x}{۸}-1)} = \lim_{x \to ۸} \frac{\sqrt{۲+\sqrt[۳]{x}}-۲}{\frac{x}{۸}-1} =$

$\lim_{x \to ۸} \frac{۲+\sqrt[۳]{x}-۴}{(\frac{x}{۸}-1)(\sqrt{۲+\sqrt[۳]{x}}+۲)} = \frac{\sqrt[۳]{x}-۲}{(\frac{x}{۸}-1)(۴)} \to \frac{0}{0} \to HOP = \frac{\frac{1}{۳\sqrt[۳]{x^۲}}}{\frac{1}{۲}} =$ [illegible] $=$ [illegible]

$\frac{\frac{1}{۱۲}}{\frac{1}{۲}} = \boxed{\frac{1}{۶}}$

Sahand