نام: دینا احدی   شماره تکلیف: ۱۹   مقطع: دوازدهم دختران B

(۱)

$$\lim_{x\to -2^+} f(x) = \lim_{x\to -2^-} f(x) \to \lim_{x\to -2} f(x) \begin{cases} \xrightarrow{-2^+} 2[2^-]+a[0^+]=2 \\ \xrightarrow{-2^-} 2[2^+]+a[0^-]=4-a \end{cases} \to a=2 \to \left[\frac{2}{3}\right]=0$$

(۲)

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

(۳)

$$\lim_{x\to -\frac{1}{2}} [8x^3 - x] = [8(\tfrac{1}{8})+\tfrac{1}{2}] = [\tfrac{3}{2}] = 1$$

(۴)

$$\lim_{x\to (-\frac{1}{2})^-} \frac{10x-5+[\frac{3}{x^2}]}{16x-[\frac{-2}{x^2}]} = \frac{-5-5+[12^-]}{-8-[-8^+]} = \frac{1}{0^-} = -\infty$$

(۵)

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

(۶)

$$\xrightarrow{Hop} \frac{\frac{2}{2\sqrt{2x+2}} - \frac{3}{2\sqrt{3x+4}}}{\frac{1}{3\sqrt[3]{x^2}}} = \frac{-\frac{1}{2}}{\frac{1}{3}} = \frac{-3}{2}$$

(۷)

$$\xrightarrow{Hop} \frac{2-7(\frac{1}{2\sqrt{x}})}{2-\frac{1}{2\sqrt{2x+1}}} = \frac{-\frac{3}{2}}{\frac{7}{4}} = \frac{-6}{7}$$

(۸)

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

$$\xrightarrow{Hop} \frac{b}{2\sqrt{bx+c}} = \frac{1}{4} \to \frac{b}{2\sqrt{c}} = \frac{1}{4} \to b=1,\ c=4,\ a=-\sqrt{c}=-2 \to \frac{ab}{c} = \frac{-2}{4} = \frac{-1}{2}$$

(۹)

$$\xrightarrow{-2\pi^+} \frac{4-2k}{\sin x} = +\infty \to \frac{4-2k}{0^+} = +\infty \to 4-2k>0 \to k<2$$

$$\xrightarrow{-\pi^-} \frac{4-3k}{\sin x} = +\infty \to \frac{4-3k}{0^-} = +\infty \to 4-3k<0 \to k>\frac{4}{3}$$

$$\xrightarrow{\cap} \frac{4}{3}<k<2 \to -\frac{4}{3} > -k > -2$$

$$\to [-k] = -2$$

(۱۰)

صورت $= 2b-2b=0$ ، مخرج $=0 \to 8a-b=0 \to b=8a$ *

$$\xrightarrow{Hop} \frac{\frac{\frac{b}{3\sqrt[3]{x^2}}}{2\sqrt{2+\sqrt[3]{x}}}}{a} = \frac{\frac{\frac{b}{12}}{4}}{a} = \frac{\frac{b}{48}}{a} = \frac{b}{48a} \overset{*}{=} \frac{8a}{48a} = \frac{1}{6}$$