آیدا نامداری
دوازدهم دختران B
تکلیف ۱۹

۱

$۲\left[\frac{۲-x}{۲}\right]+a\left[\frac{x+۲}{۳}\right] \qquad ۲+۰=۲$

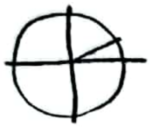
$\left[\frac{۲}{۳}\right]=۰$

$\nearrow -۲^{+} \qquad x>-۲ \qquad ۴-a=۲ \qquad a=۲$

$\searrow -۲^{-} \qquad ۴+(-a)$

۲

$\lim\limits_{x\to(\frac{\pi}{۶})^{-}} [۲\sin x-۱] \qquad [۱^{-}-۱]=-۱$



$\frac{۱}{۲}^{-}$

۳

$\lim\limits_{x\to -\frac{۱}{۲}} [۸x^{۳}-x] = [-۱+\frac{۱}{۲}] = [-\frac{۱}{۲}]=-۱$

۴

$\lim\limits_{x\to(-\frac{۱}{۲})^{-}} \frac{۱۰x-۵+\left[\frac{۳}{x^{۲}}\right]}{۱۶x-\left[-\frac{۲}{x^{۲}}\right]} = \frac{۱۰x-۵+۱۱}{۱۶x-۸} = \frac{۱۰x+۶}{۱۶x+۸} \quad \frac{-۵+۶}{-۸^{-}+۸}=\frac{۱}{۰^{-}}=-\infty$

$x<-\frac{۱}{۲}$

$۱۶x<-۸$

$x<-\frac{۱}{۲} \qquad x^{۲}>\frac{۱}{۴}$

$x^{۲}>\frac{۱}{۴} \qquad \frac{۱}{x^{۲}}<۴ \qquad -\frac{۱}{x^{۲}}>-۴ \qquad -\frac{۲}{x^{۲}}>-۸$

۵

$\lim\limits_{x\to۱^{+}} \frac{\sin^{۲}\pi x}{[x]+\cos\pi x} = \frac{۱-\cos^{۲}\pi x}{۱+\cos\pi x} = \frac{\cancel{(۱+\cos)}(۱-\cos)}{\cancel{(۱+\cos)}} \qquad ۱-\overset{-۱}{\cos\pi x}=۲$

$\boxed{6}$

$$\lim_{x\to -1} \frac{\sqrt{2x+3}-\sqrt{3x+4}}{1+\sqrt[3]{x}} \xrightarrow{hop} \frac{\frac{2}{2\sqrt{2x+3}}-\frac{3}{2\sqrt{3x+4}}}{\frac{1}{3\sqrt[3]{x^2}}} \quad \frac{1-\frac{3}{2}}{\frac{1}{3}} \quad \frac{-\frac{1}{2}}{\frac{1}{3}} = -\frac{3}{2}$$

$\boxed{7}$

$$\lim_{x\to 1} \frac{2x-7\sqrt{x}+5}{2x-\sqrt{3x+1}} \xrightarrow{hop} \frac{2-\frac{7}{2\sqrt{x}}}{2-\frac{3}{2\sqrt{3x+1}}} \quad \frac{2-\frac{7}{2}}{2-\frac{3}{4}} \quad \frac{-\frac{3}{2}}{\frac{5}{4}} \quad \frac{-12}{10}$$

$\boxed{8}$

$$\lim_{x\to 0} \frac{a+\sqrt{bx+c}}{x} = \frac{1}{4} \xrightarrow[\text{مبهم بوده قطعا}]{hop} \frac{b}{2\sqrt{bx+c}} \quad \frac{b}{2\sqrt{c}} = \frac{1}{4}$$

$2\sqrt{c} = 4b$

$a+\sqrt{c}=0$ $\quad$ $-\sqrt{c}=a$ $\quad$ $-\sqrt{c}\times\frac{2\sqrt{c}}{4}$ $\quad$ $\frac{\frac{-2c}{4}}{\frac{c}{1}}$ $\quad$ $-\frac{1}{2}$

$2\sqrt{c}=4b$ $\quad$ $b=\frac{2\sqrt{c}}{4}$

$\boxed{9}$

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

$-2\pi^+ \quad \frac{4-2k}{0^+} = +\infty$

$-2\pi^- \quad \frac{4-3k}{0^-} = +\infty$

$\sin x \quad \oplus$

$4-2k>0 \quad 4>2k \quad k<2$

$4-3k<0$

$3k>4 \quad k>\frac{4}{3}$

$\frac{4}{3} \quad 2$

$[-k]=-2$

$\boxed{10}$

$$\lim_{x\to 8} \frac{b\sqrt{2+\sqrt[3]{x}}-2b}{ax-b} \quad \frac{\frac{\overset{8a}{\cancel{b}}}{2\sqrt{2+\sqrt[3]{x}}}\times\frac{1}{3\sqrt[3]{x^2}}}{\cancel{a}} = \frac{\cancel{a}}{2\sqrt{2+\sqrt[3]{x}}\times 3\sqrt[3]{x^2}} = \frac{1}{6}$$

$2+\sqrt[3]{x}$

4×12

$8a-b=0 \quad 8a=b$