نام و نام خانوادگی ......عرفان عبداللهی...... پاسخنامه تشریحی تکلیف شماره ...۲۰... کلاس ......دوازدهم تجربی A......

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$$\lim_{x\to 2} \frac{3x-8}{x^2+ax+b} = -\infty \rightarrow \lim_{x\to 2} x^2+ax+b = 0^+$$

$$x^2+ax+b = (x-2)^2 \longrightarrow x^2+ax+b = x^2-4x+4$$

$$a=-4,\quad b=4 \longrightarrow a+b=0$$

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$$\lim \frac{x}{x^2+ax+b} = +\infty \longrightarrow \lim_{x\to \sqrt[3]{4}} x^2+ax+b = 0^+$$

$$x^2+ax+b = (x-\sqrt[3]{4})^2$$

$$x^2+ax+b = x^2-2\sqrt[3]{4}\,x+\sqrt[3]{16} \longrightarrow a=-2\sqrt[3]{4} \qquad b=\sqrt[3]{16}$$

$$\left[\frac{b}{a}\right] = \left[-\sqrt[3]{\frac{16}{32}}\right] = -1$$

۳

$$\lim_{x\to \left(\frac{1}{\sqrt{3}}\right)^+} \frac{[x]+a}{\left|\frac{\sqrt{3}}{3}x+a\right|+a} = -\infty \rightarrow \lim \frac{a-1}{\left|\frac{1}{3}+a\right|+a} = -\infty \ ,\ \left|\frac{1}{3}+a\right|+a=0$$

ق ق $\text{I)}\ \frac{1}{3}+a+a=0 \quad a=-\frac{1}{6}$

غ ق ق $\text{II)}\ -\frac{1}{3}-a+a=0$

$$\lim_{x\to \left(\frac{1}{\sqrt{3}}\right)^+} \frac{-\frac{7}{6}}{0^+} = -\infty \rightarrow [a]=-1$$

۴

$$\lim_{x\to\left(-\frac{1}{2}\right)^+} \frac{16x-\left[-\frac{2}{x^2}\right]}{24x+\left[\frac{3}{x^2}\right]} = \frac{16x-[-8^-]}{24x+[12^+]} = \frac{16x-(-9)}{24x+12}$$

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

$$\frac{16x+9}{24x+12} \longrightarrow \lim_{x\to\left(-\frac{1}{2}\right)^+} \frac{16x+9}{24x+12} = \frac{+1}{0^+} = +\infty$$

۵

$$\lim_{x\to 2^+} \frac{x^2-4}{x^3-[x^3]} = \frac{x^2-4}{x^3-8} = \frac{(x-2)(x+2)}{(x-2)(x^2+2x+4)} = \frac{4}{12}$$

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

$$\lim_{x\to -8} \frac{x^2+10x+16}{12+6\sqrt[3]{x}} = \frac{(x+2)(x+8)}{6(2+\sqrt[3]{x})}$$

$$= \frac{(x+2)\left(\sqrt[3]{x^2}-2\sqrt[3]{x}+4\right)\left(\sqrt[3]{x}+2\right)}{6\times\left(\sqrt[3]{x}+2\right)} = \frac{(-6)(12)}{6} = -12$$ 6

$$\lim_{x\to 0^-} \frac{\sqrt{2+3x}-\sqrt{2-x}}{\sqrt{1-\cos x}} \qquad \cos x \underset{x\to 0}{\sim} 1-\frac{x^2}{2}$$

$$= \frac{\sqrt{2+3x}-\sqrt{2-x}}{\sqrt{\frac{x^2}{2}}} \times \frac{\sqrt{2+3x}+\sqrt{2-x}}{\sqrt{2+3x}+\sqrt{2-x}} = \frac{4x}{\frac{-x}{\sqrt{2}}\times 2\sqrt{2}} = -2$$ 7

$$\frac{|x|}{\sqrt{2}} \leftarrow \sqrt{\frac{x^2}{2}}$$

$$\lim \frac{K+\cos\left(\sqrt{a}\,x\right)}{Kx^2} = 3 \qquad \cos x \underset{x\to 0}{\sim} 1-\frac{x^2}{2}$$

$$= \frac{K+\left(1-\frac{ax^2}{2}\right)}{Kx^2} = 3 \xrightarrow{\div} \text{Hop} = \frac{-ax}{2xK} = -\frac{a}{2K} = 3$$ 8

$$K+1=0 \longrightarrow K=-1 \qquad a=-6K=6 \qquad \frac{a}{K}=-6$$

$$\lim_{x\to(3a)^+} \frac{2\sqrt{x-3a}+3\sqrt{x}-\sqrt{27a}}{\sqrt{x^2-9a^2}} = \frac{2\sqrt{x-3a}}{\sqrt{x-3a}\times\sqrt{x+3a}} + \frac{3\left(\sqrt{x}-\sqrt{3a}\right)}{\sqrt{x-3a}\times\sqrt{x+3a}}$$ 9

$$= \frac{2}{\sqrt{x+3a}} + \frac{3(x-3a)^{\sqrt{x-3a}}}{\underbrace{\left(\sqrt{x-3a}\times\sqrt{x+3a}\right)\left(\sqrt{x}+\sqrt{3a}\right)}_{0}} = \frac{2}{\sqrt{6a}} = \sqrt{\frac{4}{6a}} = \sqrt{\frac{2}{3a}}$$

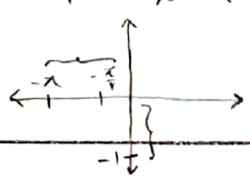
$$\lim_{x\to(-1)} \frac{1-K[x]}{x^2-1} = -\infty$$

$$\lim_{x\to(-1)^+} \frac{1+K}{x^2-1} = -\infty \to 1+K>0$$

$$\lim_{x\to(-1)^-} \frac{1+2K}{x^2-1} = -\infty \to 1+2K<0$$ 10

$$K>-1 \qquad K<-\frac{1}{2} \longrightarrow -1<K<-\frac{1}{2}$$

$$\underbrace{-\pi<K\pi<-\frac{\pi}{2}}_{x<0} \qquad \underbrace{-1<\cos K\pi<0}_{y<0}$$



نقاط مورد نظر در ناحیه سوم واقع اند.