زهرا کرمی دهم پیش دوشنبه

14

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$x=-2$ ریشه مضاعف مخرج $\longrightarrow (x-2)^2 = x^2+ax+b$

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

$\longrightarrow \boxed{a=-4}$

$\longrightarrow \boxed{b=+4}$ $\Big\} \longrightarrow a+b=0$

2

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

$\longrightarrow a=-2\sqrt[3]{4}$, $b=2\sqrt[3]{2} \longrightarrow \left[\frac{b}{a}\right] = \left[\frac{2\sqrt[3]{2}}{-2\sqrt[3]{4}}\right] = -1$

2

۳-

$\frac{1}{\sqrt{2}}$ ریشه مخرج $\longrightarrow \frac{1}{2}+a+a=0$

$\longrightarrow 2a=-\frac{1}{2} \longrightarrow \boxed{a=-\frac{1}{4}}$

$\longrightarrow [a]=-1$

2

۴-

0

$x>-\frac{1}{2} \to x^2<\frac{1}{4} \to \frac{1}{x^2}>4 \to \frac{3}{x^2}>12 \rightsquigarrow \left[\frac{3}{x^2}\right]=12$

$\hookrightarrow -\frac{2}{x^2}<-8 \rightsquigarrow \left[-\frac{2}{x^2}\right]=-9$

$$\lim_{x\to(-\frac{1}{2})^+} \frac{16x+9}{24x+12} = \frac{-8+9}{-12^+ +12} = \frac{1}{0^+} = \boxed{+\infty}$$

$$\lim_{x\to ۲} \frac{x^۲-۴}{x^۳-۸} \xrightarrow{\text{HoP}} \frac{۲x}{۳x^۲} = \frac{۲}{۱۲} = \frac{۱}{۶}$$ ۵

د

$$\lim_{x\to -۸} \frac{x^۲+۱۰x+۱۶}{۱۲+۶\sqrt[۳]{x}} \xrightarrow{\text{HoP}} \frac{۲x+۱۰}{\frac{۲}{\sqrt[۳]{x^۲}}} = \frac{-۶}{\frac{۲}{۴}} = \boxed{-۱۲}$$ ۵

د

$$\lim_{x\to ۰} \frac{\sqrt{۲+۳x}-\sqrt{۲-x}}{\sqrt{۱-\cos x}} \xrightarrow{\text{HoP}}$$ ✓

۱/۲۵

$$\frac{\sqrt{۲+۳x}-\sqrt{۲-x}}{\sqrt{۱-\cos x}} \times \frac{\sqrt{۲+۳x}+\sqrt{۲-x}}{\sqrt{۲+۳x}+\sqrt{۲-x}}$$

$$= \frac{۴x}{۲\sqrt{۲}\sqrt{۱-\cos x}} \xrightarrow{\text{HoP}} \frac{۴\sin}{۴\sqrt{۲}\sqrt{۱-\cos}} = -$$

ن

صورت را صفر کرد [illegible]

$\longrightarrow k+1=0$

۸ —

$\longrightarrow \boxed{k=-1}$

$$\xrightarrow{Hop} \frac{-\sqrt{a}\,\sin(\sqrt{a}\,x)}{2kx} \xrightarrow{Hop} \frac{-a\cos(\sqrt{a}\,x)}{\cancel{2k}\ -2} = 3$$

$$-a\cos(\sqrt{a}\,x) = -6$$

$$\longrightarrow a=6 \qquad \longrightarrow \frac{a}{k} = \frac{6}{-1} = -6$$

۲

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۹ —

$$\frac{2\sqrt{x-3a}+3\sqrt{x}-\sqrt{27a}}{\sqrt{x-3a}\ \sqrt{x+3a}}$$

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۱۰ —

$$\lim_{x\to 1^-} \frac{1-k[x]}{x^2-1} = -\infty \longrightarrow 1+k>0 \longrightarrow k>-1$$

$\longrightarrow$ k اعمران

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۷

$$\lim_{x\to 0} \frac{\sqrt{2+3x}-\sqrt{2-x}}{\sqrt{1-\cos x}} \times \frac{\sqrt{2+3x}+\sqrt{2-x}}{\sqrt{2+3x}+\sqrt{2-x}} \times \frac{\sqrt{1+\cos x}}{\sqrt{1+\cos x}} =$$

$$\lim_{x\to 0^-} \frac{4x \times \sqrt{2}}{\sqrt{1-\cos^2 x}} \times \frac{1}{2\sqrt{2}} = \lim_{x\to 0} \frac{4\sqrt{2}\,x}{|\sin x|\,2\sqrt{2}} = 2 \times \frac{x}{-\sin x} = \boxed{-2}$$

۹

$$\lim_{x\to 3a^+} \frac{2\cancel{\sqrt{x-3a}}}{\cancel{\sqrt{x-3a}}\sqrt{x+3a}} + \frac{3(\sqrt{x}-\sqrt{3a})}{\sqrt{x-3a}\,\sqrt{x+3a}} = \lim_{x\to 3a^+} \frac{2}{\sqrt{6a}} + \frac{3(\sqrt{x}-\sqrt{3a})}{\sqrt{x-3a}\,\sqrt{x+3a}} \times \frac{\sqrt{x}+\sqrt{3a}}{\sqrt{x}+\sqrt{3a}}$$

$$\lim_{x\to 3a^+} \frac{2}{\sqrt{6a}} + \frac{3(\cancel{x-3a})}{\cancel{\sqrt{x-3a}}\,\sqrt{x+3a}\,(\sqrt{x}+\sqrt{3a})} = \lim_{x\to 3a^+} \left(\frac{2}{\sqrt{6a}} + \frac{3\cancel{\sqrt{x-3a}}}{\cancel{\sqrt{x+3a}}(\sqrt{x}+\sqrt{3a})}\right) = \lim_{x\to 3a^+} \frac{2}{\sqrt{6a}} + 0 \rightsquigarrow \frac{2}{\sqrt{6a}} = \sqrt{\frac{4}{6a}} = \sqrt{\frac{2}{3a}}$$

۱۰

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

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

$\to \lim \frac{1-k(-2)}{0^+} = -\infty \to 1+2k<0 \to k<-\frac{1}{2}$

$\to -1<k<-\frac{1}{2}$ $\begin{cases} -\pi < k\pi < -\frac{\pi}{2} \\ -1 < \cos k\pi < 0 \end{cases}$

مولفه های اول و دوم هردو منفی هستند پس در ناحیه ی سوم است!