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نام و نام خانوادگی ......محمد...... پاسخنامه تشریحی تکلیف شماره ...۲۱... کلاس ...۱۲A...

ردیف	پاسخ
۱	a ← تنها ریشه‌ی زیر رادیکال و باید مخرج را هم صفر کند $\Delta=0 \to (m+3)^2-4(\frac{m}{4})\times 6=0 \to m^2+6m+9-12=0 \to m^2-6m+9=0 \to m=3$ $\lim_{x\to a}\frac{\sqrt{6x^2+6x+\frac{3}{2}}}{\lvert 2x^3+a^2\rvert}=\frac{\sqrt{6(x^2+x+\frac{1}{4})}}{\lvert 2x^3+a^2\rvert}=\frac{\sqrt{6}\lvert x+\frac{1}{2}\rvert}{\lvert 2x^3+a^2\rvert}$ $2a^3+a^2=0 \to a^2(2a+1)=0 \to \begin{cases} a=0 \to \frac{0}{0}\ \times \\ a=-\frac{1}{2} \to \frac{\sqrt{6}\lvert x+\frac{1}{2}\rvert}{\lvert 2x^3+\frac{1}{4}\rvert}=\frac{0}{0}\ ✓ \end{cases}$ $\lim_{x\to -\frac{1}{2}}\frac{\sqrt{6}\lvert x+\frac{1}{2}\rvert}{2\lvert x^3+\frac{1}{8}\rvert}=\frac{\sqrt{6}\lvert x+\frac{1}{2}\rvert}{2\lvert x+\frac{1}{2}\rvert\lvert x^2-\frac{1}{2}x+\frac{1}{4}\rvert}=\frac{\sqrt{6}}{3}$ $\frac{2\tan b}{\sqrt{-(-\frac{1}{2})}}=\frac{2\sqrt{6}}{3} \to \tan b=\frac{\sqrt{3}}{3} \to b=\frac{\pi}{6}$ ۱
۲	$1+a+b=0 \Rightarrow a+b=-1$; $5-a+b=0 \Rightarrow$ hop $\Rightarrow -2a=-4$ $\Rightarrow a=2 \Rightarrow b=-3$ $\left[\frac{3-4}{3}\right]=-3$ ج ✓ ۲
۳	$\tan\frac{3\pi}{4} \Rightarrow -1$; $\frac{+(x^2+x-2)}{a(1-x)} \xrightarrow{hop} \frac{2x+1}{-a} \xRightarrow{x=1} \frac{3}{-a}=-1 \Rightarrow a=3$ $x=5 \Rightarrow b(5+5) \Rightarrow 10b=\frac{28}{-12} \Rightarrow a\times b=\frac{-7}{10}$ ج ✓ ۲
۴	$f(x)=a[x+1]+b[x+[a+1]] \Rightarrow [x+1](a+b)+b[a] \Rightarrow$ $0^{+} \Rightarrow a+b+b[a]=b[a]$ $\Rightarrow 0(a+b)+b[a]=b[a] \Rightarrow a+b=0 \Rightarrow \frac{a[a]}{f(a)} \Rightarrow \frac{a[a]}{b[a]}$ $b=-a \Rightarrow \frac{a[a]}{-a[a]}=-1$ ج ✓ ۲
۵	$b=0 \xRightarrow{\text{پیوستگی}} f(x)=-2a \Rightarrow \frac{a}{f(b)}=\frac{a}{-2a}=\frac{-1}{2}$ ج ✓ ۲

① => $a^2 + am + n = 0$ / hop → $\frac{2x+m}{-1} \overset{x=a}{\Rightarrow} 2a + m = -2 \Rightarrow$

$\Rightarrow f(2a) \Rightarrow 4a^2 + 2ma + n = 0 \Rightarrow 3a^2 + am = 0 \Rightarrow a(3a+m) = 0$ → $a=0$, → $a = \frac{-m}{3}$

$m = -6$ { $a = 2$ { $n = 8$ { $n - m = 14$ ✓

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$1^+ \Rightarrow (1-a) + (3a^2-1)(-2) \Rightarrow 1 - a - 6a^2 + 2 = b \sin\frac{\pi}{a} \Rightarrow -3a^2 + 1 = -6a^2 - a + 3 \Rightarrow$

$0^+ \Rightarrow 0 - 3a^2 + 1 = b \sin\frac{\pi}{a}$ { $-3a^2 - a + 2 \Rightarrow x_{1,2} = \frac{1 \pm 5}{-6}$ → -1 غ ق ق ، → $\frac{2}{3} = a$

$b \sin\frac{3\pi}{2} \Rightarrow -b = -3(\frac{2}{3})^2 + 1 \Rightarrow b = \frac{1}{3} \Rightarrow \frac{a}{b} = \frac{\frac{2}{3}}{\frac{1}{3}} = 2$ ✓ ۷

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$1^+ \rightarrow \frac{x^2 + mx - m - 1}{mx^2 - m + x - 1} \overset{hop}{\Rightarrow} \frac{2x+m}{2mx+1} \overset{x=1}{\Rightarrow} \frac{2+m}{2m+1} = \frac{m}{m+2} \Rightarrow m^2 - 3m - 4$ → 4 ✗ , → -1 ✓

$1^- \Rightarrow \frac{x^2+m}{\ldots} \overset{hop}{\Rightarrow} \frac{2x+m}{2mx+1} \overset{x=1}{\Rightarrow} \frac{2+m}{2m+1}$ { $f(-1) \Rightarrow \frac{|1-2m-1|}{0+|-21|} = \frac{2}{2}$ ۸

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$m=4 \rightarrow \frac{|x^2+4x-5|}{4|x-1||x+1| + |x-1|} = \frac{|x-1||x+5|}{|x-1|(4|x+1|+1)} \rightarrow \lim_{x\to\frac{1}{4}} \frac{5+\frac{1}{4}}{4\times\frac{5}{4}+1} = \frac{\frac{21}{4}}{6} = \frac{7}{8}$

$\frac{1}{2}$

$m=-1 \rightarrow \frac{|x^2-x|}{-|x-1||x+1| + |x-1|} = \frac{|x||x-1|}{|x-1|(-|x+1|+1)}$ ✗

$\frac{|a|\sqrt{3}\,|x+1|}{|x^3 + (m-2)x + a^2|} \overset{x=a}{\Rightarrow} \frac{|a|\sqrt{3}\,|a+1|}{|a^3 + (m-2)a + a^2|} = 0 \overset{hop}{\Rightarrow} \frac{a}{3x^2 + m - 2} \Rightarrow$ صفر

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$a^2 + a = 0 \rightarrow a(a+1) = 0 \rightarrow \begin{cases} a = 0 ✗ \\ a = -1 ✓ \end{cases}$ $a(a^2 + m - 2 + a)$

$a = 0 \Rightarrow 9m - 2 \neq 0 \Rightarrow \frac{a}{3(a^2+m-2)} =$ صفر ۹

$a^3 + a(m-2) + a^2 = 0 \overset{a=-1}{\longrightarrow} -1 - m + 2 + 1 = 0 \rightarrow m = 2 \quad \lim_{x\to-1} \frac{\sqrt{3}\,|-x-1|}{|x^3+1|} = \frac{\sqrt{3}\,|-(x+1)|}{|(x+1)(x^2-x+1)|} = \frac{\sqrt{3}}{3}$

$0^- \Rightarrow \frac{x^2+x}{x^2+ax} \overset{hop}{\underset{x=0}{\Rightarrow}} \frac{2x+1}{2x+a} = \frac{1}{a} = \frac{2a-1}{2a+2} \Rightarrow 2a^2 - 3a - 2 \rightarrow 9 + 16 = 25$

$a = \frac{3 \pm 5}{4}$ → $\frac{-1}{2}$ ✗ , → 2 ✓ $\} \Rightarrow \lim_{x\to\frac{1}{2}} f(x) \Rightarrow \frac{\frac{1}{4}+\frac{1}{2}}{\frac{1}{4}+1} = \frac{\frac{3}{4}}{\frac{5}{4}} = \frac{3}{5}$ ✓ ۱۰

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