نام و نام خانوادگی ..... پاسخنامه تشریحی تکلیف شماره ..... کلاس .....

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$$\lim_{x\to 1}\frac{2x^2-7x+3}{6x^2-8x+2}=\frac{0}{0}=\lim_{x\to 1}\frac{(2x-1)(x-3)}{(x-1)(6x-2)}=\lim_{x\to 1}\frac{2x-3}{6x-2}=\frac{-1}{4}$$

$$\lim_{x\to 1}\frac{2x^2-7x+3}{6x^2-8x+2}=\frac{0}{0}=\frac{1-3}{6-2}=-\frac{1}{2}$$

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$$\lim_{x\to 0}\frac{|3x-1|-|3x+1|}{x}=\frac{0}{0}=\lim_{x\to 0}\frac{-3x+1-3x-1}{x}=\frac{-6x}{x}=-6$$

$$\lim_{x\to 0}\frac{|3x-1|-|3x+1|}{x}=\frac{0}{0}=\frac{-6x}{x}=-6$$

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$$\lim_{x\to 4}\frac{x-4}{\sqrt{x}-2}=\frac{0}{0}=\lim_{x\to 4}\frac{(\sqrt{x}-2)(\sqrt{x}+2)}{\sqrt{x}-2}=\lim_{x\to 4}\frac{(\sqrt{x}-2)(\sqrt{x}+2)}{\sqrt{x}-2}=\sqrt{4}+2=4$$

$$\lim_{x\to 4}\frac{x-4}{\sqrt{x}-2}=\frac{0}{0}=4$$

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$$\lim_{x\to 2}\frac{x-\sqrt{3x}}{2x^2-x-6}=\frac{0}{0}=\lim_{x\to 2}\frac{\sqrt{x}(\sqrt{x}-\sqrt{3})}{(x-2)(2x-3)}=\lim_{x\to 2}\frac{\sqrt{x}(\sqrt{x}-\sqrt{3})}{(\sqrt{x}-\sqrt{3})(\sqrt{x}+\sqrt{3})(2x-3)}$$

$a_1=2$

$x_2=\frac{-3}{2}$

$$\lim_{x\to 2}\frac{\sqrt{x}}{(\sqrt{x}+\sqrt{3})(2x-3)}=\frac{\sqrt{2}}{2\sqrt{2}}=\frac{1}{2}$$

$$\lim_{x\to 2}\frac{x-\sqrt{3x}}{2x^2-x-6}=\frac{0}{0}=\frac{\sqrt{2}}{2\sqrt{2}}=\frac{1}{2}$$

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$$\lim_{x\to 1}\frac{1-\sqrt{3x}}{2-\sqrt{5-x}}=\frac{0}{0}=\lim_{x\to 1}\frac{1-\sqrt{3x}}{2-\sqrt{5-x}}\times\frac{1+\sqrt{3x}}{1+\sqrt{3x}}\times\frac{2+\sqrt{5-x}}{2+\sqrt{5-x}}=\frac{1-3x}{4-5+x}\times\frac{2}{2}$$

$$\lim_{x\to 1}\frac{1-\sqrt{3x}}{2-\sqrt{5-x}}=\frac{0}{0}=\lim\frac{1-3x}{-(1-x)}\times 2=-2$$

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$$\lim_{x\to 2}\frac{\sqrt{3x+4}-4}{\sqrt[3]{5x+7}-3}=\frac{0}{0}\times\frac{\sqrt[3]{}}{\sqrt[3]{}}\times\frac{\sqrt{}}{\sqrt{}}=\lim_{x\to 2}\frac{3x+4-16}{5x+7-27}\times\frac{2\sqrt{7}}{4}=\lim_{x\to 2}\frac{3x-12}{5x-20}\times\frac{2\sqrt{7}}{4}=$$

$$\lim_{x\to 4}\frac{3x-12}{5x-20}\times\frac{2\sqrt{7}}{4}=\lim_{x\to 4}\frac{3\cancel{(x-4)}}{5\cancel{(x-4)}}\times\frac{2\sqrt{7}}{4}=2/05$$

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$$\lim_{x\to 1}\frac{\sqrt[3]{3x}+\sqrt{2x}-5}{\sqrt[3]{x}-1}=\frac{0}{0}\ \ x\to 1\ \ x\neq 1=\lim_{x\to 1}\frac{\sqrt[3]{3x}+\sqrt{2x}-5}{\sqrt[3]{x}-1}\times\frac{\sqrt[3]{}}{\sqrt[3]{}}\times\frac{\sqrt{}}{\sqrt{}}=\lim_{x\to 1}\frac{3x+\sqrt{2x}-8}{x-1}\times\frac{3}{2}=$$

$$\lim_{x\to 1}\frac{\cancel{(\sqrt{3x}-1)}(3x+\sqrt{2x}-8)}{\cancel{(\sqrt{3x}-1)}(\sqrt{2x}+1)}=\frac{3-8}{1+1}=\frac{-1}{2}$$

$$\lim_{x\to 1}\frac{\sqrt[3]{3x}+\sqrt{2x}-5}{\sqrt[3]{x}-1}=\frac{0}{0}=\frac{-1}{2}$$

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$$\lim_{x\to\pi}\frac{1+\cos^3 x}{\sin^2 x}=\frac{0}{0}=\lim_{x\to\pi}\frac{(1+\cos x)(1+\cos^2 x-\cos x)}{\sin^2 x}\times\frac{1-\cos x}{1-\cos x}=$$

$$\lim_{x\to\pi}\frac{\sin^2 x(1+\cos^2 x-\cos x)}{\sin^2 x(1-\cos x)}=\frac{1+1+1}{1+1}=\frac{3}{2}$$

$$\lim_{x\to\pi}\frac{1+\cos^3 x}{\sin^2 x}=\frac{0}{0}=\frac{3}{2}$$

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$$\lim_{x\to\frac{3\pi}{4}}\frac{\tan^2 x-1}{\cos^2 x}=\frac{0}{0}=\lim_{x\to\frac{3\pi}{4}}\frac{-2\tan x}{\tan^2 x}=\lim_{x\to\frac{3\pi}{4}}\frac{-2\sin x\cos^2 x}{\cos x\sin^2 x}=$$

$$\lim_{x\to\frac{3\pi}{4}}\frac{-2\sin x}{\cos x\sin x}=\frac{-2\left(\frac{\sqrt{2}}{2}\right)}{\frac{\sqrt{2}}{2}\times 1}=-2$$

$$\lim_{x\to\frac{3\pi}{4}}\frac{\tan^2 x-1}{\cos^2 x}=\frac{0}{0}=-2$$

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$$\lim_{x\to\frac{\pi}{2}}\frac{1-\tan x}{\sin x-\cos x}=\frac{0}{0}=\lim_{x\to\frac{\pi}{2}}\frac{-(\cos x-\sin x)}{(\sin x-\cos x)}=\frac{-1}{\cos x}=\frac{-1}{\frac{\sqrt{2}}{2}}=-\sqrt{2}$$

$$\lim_{x\to\frac{\pi}{2}}\frac{1-\tan x}{\sin x-\cos x}=\frac{0}{0}=-\sqrt{2}$$