نام و نام خانوادگی: سیدرضا المانیان  نشانه تکلیف: ۳۵  کلاس: یازدهم پسر B

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$$\lim_{x\to 1}\frac{6x^2-7x+3}{5x^2-8x+3}\overset{\text{جایگذاری}}{\Longrightarrow}\frac{0}{0}\overset{\text{رفع ابهام}}{\Longrightarrow}\frac{3(x-1)(x-\frac{1}{3})}{5(x-1)(x-\frac{3}{5})}=\boxed{\frac{1}{2}}$$

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$$\lim_{x\to 0}\frac{|2x-1|-|2x+1|}{x}\Longrightarrow$$

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$0^+$: $\frac{0}{0}\overset{\text{رفع ابهام}}{\Longrightarrow}\frac{1-2x-1-2x}{x}=\frac{-4x}{x}=-4$

$0^-$: $\frac{0}{0}\overset{\text{رفع ابهام}}{\Longrightarrow}\frac{-1+2x+1+2x}{x}=\frac{4x}{x}=4$

$\Rightarrow \boxed{-4}$

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$$\lim_{x\to 4}\frac{\sqrt{2x}-2}{\sqrt{x}-2}\overset{\text{جایگذاری}}{=}\frac{0}{0}\overset{\text{رفع ابهام}}{\Longrightarrow}\frac{(\sqrt{2x}-2)(\sqrt{2x}+2)}{\sqrt{2x}-2}=\sqrt{2x}+2\Rightarrow\sqrt{8}+2=\boxed{4}$$

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$$\lim_{x\to 2}\frac{3x-\sqrt{2x+5}}{2x^2-x-5}=\frac{0}{0}\overset{\text{رفع ابهام}}{\Longrightarrow}\frac{3x-\sqrt{2x+5}}{2(x-2)(x+\frac{5}{2})}\times\frac{3x+\sqrt{2x+5}}{3x+\sqrt{2x+5}}=\frac{9x(x-2)}{2(x-2)(x+\frac{5}{2})(3x+\sqrt{2x+5})}$$

$$=\frac{9}{2(\frac{7}{2})(8)}=\boxed{\frac{1}{14}}$$

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$$\lim_{x\to 1}\frac{1-\sqrt{x}}{2-\sqrt{5-x}}=\frac{0}{0}\overset{\text{رفع ابهام}}{\Longrightarrow}\frac{1-\sqrt{x}}{2-\sqrt{5-x}}\times\frac{1+\sqrt{x}}{1+\sqrt{x}}\times\frac{2+\sqrt{5-x}}{2+\sqrt{5-x}}=$$

$$-1\times\frac{1-x}{-1+x}\times\frac{2+\sqrt{5-x}}{1+\sqrt{x}}=-\left(\frac{4}{2}\right)=\boxed{-2}$$

$$\lim_{x\to 2}\frac{\sqrt{3x+2}-2}{\sqrt[3]{5x+7}-3}=\frac{0}{0}\overset{\text{ضرب مزدوج}}{\Longrightarrow}\frac{\sqrt{3x+2}-2}{\sqrt[3]{5x+7}-3}\times\frac{\sqrt{3x+2}+2}{\sqrt{3x+2}+2}$$

$$\times\frac{\sqrt[3]{(5x+7)^2}+3\sqrt[3]{5x+7}+9}{\sqrt[3]{(5x+7)^2}+3\sqrt[3]{5x+7}+9}=\frac{3x-12}{5x-20}\times\frac{27}{8}=\frac{3}{5}\times\frac{27}{8}=\frac{81}{40}$$

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$$\lim_{x\to 1}\frac{\sqrt{3x+\sqrt{x}}-2}{\sqrt[3]{x}-1}\Rightarrow\frac{0}{0}\overset{\text{ضرب مزدوج}}{\Longrightarrow}\frac{\sqrt{3x+\sqrt{x}}-2}{\sqrt[3]{x}-1}\times\frac{\sqrt{3x+\sqrt{x}}+2}{\sqrt{3x+\sqrt{x}}+}$$

$$\times\frac{\sqrt[3]{x^2}+1+\sqrt[3]{x}}{\sqrt[3]{x^2}+1+\sqrt[3]{x}}=\frac{3x+\sqrt{x}-4}{x-1}\times\frac{3}{4}=\frac{3(\sqrt{x}-1)(\sqrt{x}+\frac{4}{3})}{(\sqrt{x}-1)(\sqrt{x}+1)}\times\frac{3}{4}$$

$$=\frac{7}{2}\times\frac{3}{4}=\frac{21}{8}$$

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$$\lim_{x\to\pi}\frac{1+\cos^3 x}{\sin^2 x}=\frac{0}{0}\overset{\text{ضرب مزدوج}}{\Longrightarrow}\frac{(1+\cos x)(1+\cos^2 x-\cos x)}{(1-\cos x)(1+\cos x)}\Rightarrow$$

$$\frac{1+1+1}{1-(-1)}=\frac{3}{2}$$

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$$\lim_{x\to\frac{\pi}{4}}\frac{1-\tan x}{\sin x-\cos x}=\frac{0}{0}\overset{\text{ضرب مزدوج}}{\Longrightarrow}\frac{1-\frac{\sin x}{\cos x}}{\sin x-\cos x}\Rightarrow\frac{-(\cos x-\sin x)}{\cos x(\sin x-\cos x)}$$

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$$\frac{-1}{\cos x}=\frac{-1}{\frac{\sqrt{2}}{2}}=-\sqrt{2}$$

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

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$$\Rightarrow\frac{\frac{\sin^2 x-\cos^2 x}{\cos^2 x}}{\frac{\cos^2 x+\sin^2 x-2\sin^2 x}{\cos^2 x-\sin^2 x}}=\frac{-1}{\frac{1}{2}}=-2$$