نام و نام خانوادگی ......محمد مهدی جانی...... پاسخنامه تشریحی تکلیف شماره ..۵.. کلاس ..۳.. یازدهم ریاضی B

$\lim\limits_{x\to 1} \dfrac{4x^2-7x+3}{5x^2-8x+3} = \dfrac{0}{0} \xrightarrow{\text{رفع ابهام}} \lim\limits_{x\to 1} \dfrac{\cancel{(x-1)}(4x-3)}{\cancel{(x-1)}(5x-3)} = \boxed{\dfrac{1}{2}}$	۱
$\lim\limits_{x\to 0} \dfrac{\lvert 3x-1\rvert - \lvert 3x+1\rvert}{x} = \dfrac{0}{0} \xrightarrow{\text{رفع ابهام}} \lim\limits_{x\to 0} \dfrac{-(3x-1)-(3x+1)}{x}$ $\to \dfrac{-6\cancel{x}}{\cancel{x}} = \boxed{-6}$	۲
$\lim\limits_{x\to 4} \dfrac{x-4}{\sqrt{x}-2} = \dfrac{0}{0} \xrightarrow{\text{رفع ابهام}} \lim\limits_{x\to 4} \dfrac{\cancel{(\sqrt{x}-2)}(\sqrt{x}+2)}{\cancel{\sqrt{x}-2}} = \boxed{4}$	۳
$\lim\limits_{x\to 2} \dfrac{x-\sqrt{2x}}{2x^2-x-6} = \dfrac{0}{0} \xrightarrow{\text{رفع ابهام}} \lim\limits_{x\to 2} \dfrac{\cancel{x-\sqrt{2x}}}{(x-2)(2x+3)} \times \dfrac{\cancel{\text{مز}}}{\text{مز}} =$ $\dfrac{\cancel{x^2-2x}}{(\cancel{x-2})(2x+3)} \times \dfrac{1}{4} = \lim\limits_{x\to 2} \dfrac{x}{(2x+3)} \times \dfrac{1}{4} = \boxed{\dfrac{1}{14}}$	۴
$\lim\limits_{x\to 1} \dfrac{1-\sqrt{x}}{2-\sqrt{5-x}} = \dfrac{0}{0} \xrightarrow{\text{رفع ابهام}} \lim\limits_{x\to 1} \dfrac{\cancel{1-\sqrt{x}}}{\cancel{2-\sqrt{5-x}}} \times \dfrac{\cancel{\text{مز}}}{\text{مز}} \times \dfrac{\text{مز}}{\cancel{\text{مز}}}$ $\dfrac{1-x}{4-5+x} \times \dfrac{4}{2} = \boxed{-2}$	۵

$$\lim_{x\to 4}\frac{\sqrt{3x+4}-4}{\sqrt[3]{5x+7}-3}=\frac{0}{0}\xrightarrow{\text{رفع ابهام}}\lim\frac{\cancel{\sqrt{3x+4}-4}}{\cancel{\sqrt[3]{5x+7}-3}}\times\frac{\cancel{\text{مص}}}{\text{مص}}\times\frac{\text{مم}}{\cancel{\text{مم}}}$$ ۶

$$\frac{3\cancel{x}+4-16}{5\cancel{x}+7-27}\times\frac{27}{8}=\frac{3}{5}\times\frac{27}{8}=\boxed{\frac{81}{40}}$$

$$\lim_{x\to 1}\frac{\sqrt{3x+\sqrt{x}}-2}{\sqrt[3]{x}-1}=\frac{0}{0}\xrightarrow{\text{رفع ابهام}}\lim_{x\to 1}\frac{\cancel{\sqrt{3x+\sqrt{x}}-2}}{\cancel{\sqrt[3]{x}-1}}\times\frac{\cancel{\text{مص}}}{\text{مص}}\times\frac{\text{مم}}{\cancel{\text{مم}}}$$ ۷

$$\frac{3x+\sqrt{x}-4}{x-1}\times\frac{3}{4},\ \lim_{x\to 1}\frac{\cancel{(\sqrt{x}-1)}(3\sqrt{x}+4)}{\cancel{(\sqrt{x}-1)}(\sqrt{x}+1)}\times\frac{3}{4}=\boxed{\frac{21}{8}}$$

$$\lim_{x\to\pi}\frac{1+\cos^3 x}{\sin^2 x}=\frac{0}{0}\xrightarrow{\text{رفع ابهام}}\lim_{x\to\pi}\frac{\cancel{(1+\cos x)}(1+\cos^2 x-\cos x)}{1-\cancel{\cos^2 x}}$$ ۸

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

$$\lim_{x\to\frac{\pi}{4}}\frac{1-\tan x}{\sin x-\cos x}=\frac{0}{0}\xrightarrow{\text{رفع ابهام}}\lim_{x\to\frac{\pi}{4}}\frac{\frac{\cancelto{-1}{\cos x-\sin x}}{\cos x}}{\cancel{\sin x-\cos x}}=-\frac{1}{\cos x}$$ ۹

$$\lim_{x\to\frac{\pi}{4}}-\frac{1}{\cos x}=\boxed{-\sqrt{2}}$$

$$\lim_{x\to\frac{3\pi}{4}}\frac{\tan^2 x-1}{\cos 2x}=\frac{0}{0}\xrightarrow{\text{رفع ابهام}}\lim_{x\to\frac{3\pi}{4}}\frac{\frac{\cancelto{-1}{\sin^2 x-\cos^2 x}}{\cos^2 x}}{\cancel{\cos^2 x-\sin^2 x}}$$ ۱۰

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