MICRO

۲۰

لیانا ابراهیمی یازدهم گروه دختر C

۱_ $\lim_{x\to 1}\frac{4x^2-7x+3}{5x^2-8x+3}=\frac{0}{0}\longrightarrow\frac{\cancel{(x-1)}(4x-3)}{\cancel{(x-1)}(5x-3)}=\frac{1}{2}$

۲_ $\lim_{x\to 0}\frac{|\overset{\ominus}{3x-1}|-|\overset{\oplus}{3x+1}|}{x}=\frac{1-3x-3x-1}{x}=\frac{-6x}{x}=-6$

۳_ $\lim_{x\to 4}\frac{x-4}{\sqrt{x}-2}=\frac{0}{0}\longrightarrow\frac{\cancel{(\sqrt{x}-2)}(\sqrt{x}+2)}{\cancel{(\sqrt{x}-2)}}=\sqrt{x}+2=4$

۴_ $\lim_{x\to 2}\frac{x-\sqrt{2x}}{2x^2-x-6}=\frac{0}{0}\longrightarrow\frac{\sqrt{x}\,\cancel{(\sqrt{x}-\sqrt{2})}}{\underbrace{(x-2)}_{\cancel{(\sqrt{x}-\sqrt{2})}(\sqrt{x}+\sqrt{2})}(2x+3)}=\frac{\sqrt{x}}{(\sqrt{x}+2)(2x+3)}=\frac{1}{14}$

۵_ $\lim_{x\to 1}\frac{\overbrace{1-\sqrt{x}}^{1-x}}{\underbrace{2-\sqrt{5-x}}_{4-5+x}}=\frac{0}{0}\longrightarrow\times\frac{\text{مم}}{\text{مم}}\times\frac{\text{مص}}{\text{مص}}\longrightarrow 2a=2\longrightarrow a=1$

$=\frac{1-x}{x-1}\times\frac{4}{2}=-2$

۶_ $\lim_{x\to 4}\frac{\overbrace{\sqrt{3x+4}-4}^{3x+4-16}}{\underbrace{\sqrt[3]{5x+7}-3}_{5x+7-27}}\times\frac{\text{مص}}{\text{مص}}\times\frac{\text{مم}}{\text{مم}}\qquad\frac{\overbrace{3x-12}^{3(x-4)}}{\underbrace{5x-20}_{5(x-4)}}\times\frac{27}{8}=\frac{81}{40}$

۷_ $\lim\frac{\overbrace{\sqrt{3x+\sqrt{x}}-2}^{3x+\sqrt{x}-4}}{\underbrace{\sqrt[3]{x}-1}_{x-1}}\times\frac{\text{مص}}{\text{مص}}\times\frac{\text{مم}}{\text{مم}}$

$\frac{3x+\sqrt{x}-4}{x-1}\times\frac{3}{4}=\frac{(\sqrt{x}-1)(3\sqrt{x}+4)}{(\sqrt{x}-1)(\sqrt{x}+1)}\times\frac{3}{4}\longrightarrow\frac{7}{2}\times\frac{3}{4}=\frac{21}{8}$

Subject: Date:

$$\lim_{x \to \pi} \frac{1+\cos^3 x}{\underset{1-\sin^2 x}{\sin^2 x}} = \frac{0}{0} \to \frac{(1+\cancel{\cos x})(1+\cos^2 x-\cos x)}{(1-\cos x)(1+\cancel{\cos x})}$$ -9

$$x \to \pi = \frac{3}{2}$$

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

$$\to \frac{-1}{\frac{\sqrt{2}}{2}} = -\frac{\cancel{2}}{\cancel{\sqrt{2}}} \times \frac{\cancel{\sqrt{2}}}{\cancel{\sqrt{2}}} = -\sqrt{2}$$

$$\lim \frac{\tan^2 x-1}{\cos^2 x} = \frac{\frac{1-\cos^2 x}{1+\cos^2 x}-1}{\cos^2 x} = \frac{-2}{1+\cos^2 x} \to \frac{-2}{1+0} = -2$$ -10