Subject:
Date

۲۰

$$\lim_{x\to1}\frac{4x^2-7x+3}{5x^2-8x+3}=\frac{0}{0} \text{ مبهم } \longrightarrow \lim_{x\to1}\frac{(x-1)(4x-3)}{(x-1)(5x-3)}=\frac{4-3}{5-3}=\frac{1}{2}$$ -۱

$$\lim_{x\to0}\frac{|3x-1|-|3x+1|}{x}=\frac{0}{0} \text{ مبهم } \longrightarrow \lim_{x\to0}\frac{1-3x-3x-1}{x}=\frac{-6x}{x}=-6$$ -۲

$$\lim_{x\to4}\frac{x-4}{\sqrt{x}-2}=\frac{0}{0} \text{ مبهم } \longrightarrow \lim_{x\to4}\frac{(\sqrt{x}-2)(\sqrt{x}+2)}{(\sqrt{x}-2)}=2+2=4$$ -۳

$$\lim_{x\to2}\frac{x-\sqrt{2x}}{2x^2-x-6}=\frac{0}{0} \text{ مبهم } \xrightarrow{\times \text{مزدوج}} \lim_{x\to2}\frac{x^2-2x}{4(2x^2-x-6)}=\lim_{x\to2}\frac{x(x-2)}{4(x-2)(2x+3)}=\frac{1}{14}$$ -۴

$$\lim_{x\to1}\frac{1-\sqrt{x}}{2-\sqrt{5-x}}=\frac{0}{0} \text{ مبهم } \frac{\times \text{مزدوج}}{\times \text{مزدوج}} \lim_{x\to1}\frac{4(1-x)}{2(4-5+x)}=\lim_{x\to1}\frac{2(1-x)}{x-1}=-2$$ -۵

$$\lim_{x\to4}\frac{\sqrt{3x+4}-4}{\sqrt[3]{5x+7}-3}=\frac{0}{0} \text{ مبهم } \xrightarrow{\frac{\times \text{مزدوج}}{\times \text{مزدوج}}} \lim_{x\to4}\frac{27(3x+4-16)}{8(5x+7-27)}=\lim_{x\to4}\frac{27\times3(x-4)}{8\times5(x-4)}=\frac{81}{40}$$ -۶

$$\lim_{x\to1}\frac{\sqrt{3x+\sqrt{x}}-2}{\sqrt[3]{x}-1}=\frac{0}{0} \text{ مبهم } \xrightarrow{\times \text{مزدوج}} \lim_{x\to1}\frac{3x+\sqrt{x}-4}{4(\sqrt[3]{x}-1)}=\lim_{x\to1}\frac{3x+x^{\frac{1}{2}}-4}{4x^{\frac{1}{3}}-4} \overset{HoP}{=} \frac{3+\frac{1}{2}x^{-\frac{1}{2}}}{\frac{4}{3}x^{-\frac{2}{3}}}$$ -۷

$$=\frac{3+\frac{1}{2}}{\frac{4}{3}}=\frac{\frac{7}{2}}{\frac{4}{3}}=\frac{21}{8}$$

$$\lim_{x\to\pi}\frac{1+\cos^3x}{\sin^2x} \overset{\frac{0}{0}\text{ مبهم}}{=} \lim_{x\to\pi}\frac{(1+\cos x)(1+\cos^2x-\cos x)}{(1-\cos x)(1+\cos x)}=\frac{1+1+1}{1+1}=\frac{3}{2}$$ -۸

$$\lim_{x\to\frac{\pi}{4}}\frac{1-\tan x}{\sin x-\cos x}=\lim_{x\to\frac{\pi}{4}}\frac{\frac{\cos x-\sin x}{\cos x}}{\sin x-\cos x}=\frac{-1}{\cos x}=\frac{-1}{\frac{\sqrt{2}}{2}}=-\sqrt{2}$$ -۹

$\frac{0}{0}$ مبهم

$$\lim_{x\to\frac{3\pi}{4}}\frac{\tan^2x-1}{\cos2x}=\frac{0}{0} \text{ مبهم } \longrightarrow \lim_{x\to\frac{3\pi}{4}}\frac{\frac{\sin^2x-\cos^2x}{\cos^2x}}{\cos^2x-\sin^2x}=\lim_{x\to\frac{3\pi}{4}}\frac{-1}{\cos^2x}=\frac{-1}{\frac{1}{2}}=-2$$ -۱۰

PAPCO