مرتضا علیجانی

۱۸٫۵

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

$$\lim_{x\to 0}\frac{|2x-1|-|3x+1|}{x}=\frac{1-2x-3x-1}{x}=\frac{-5x}{x}=-5$$ ۲

$$\lim_{x\to 4}\frac{x-4}{\sqrt{x}-2}=\frac{(\sqrt{x}-2)(\sqrt{x}+2)}{\sqrt{x}-2}=\sqrt{x}+2 \overset{x=4}{\Rightarrow} 4$$ ۳

$$\lim_{x\to 2}\frac{x-\sqrt{3x-2}}{3x^2-x-6}\times\frac{3+\sqrt{3x-2}}{3+\sqrt{3x-2}}=\frac{x^2-3x+2}{(x-2)(3x+4)(x+\sqrt{3x-2})}=\frac{x(x-2)}{(x-2)(3x+4)(x+\sqrt{3x-2})}$$ ۴

$$=\frac{x}{(3x+4)(x+\sqrt{3x-2})} \quad x=2 \Rightarrow \frac{2}{7\times 4}=\frac{1}{14}$$

$$\lim_{x\to 1}\frac{1-\sqrt{x}}{2-\sqrt{5-x}}\times\frac{3+\sqrt{5-x}}{3+\sqrt{5-x}}\times\frac{1+\sqrt{x}}{1+\sqrt{x}}=\frac{(1-x)(3+\sqrt{5-x})}{(4-5+x)(1+\sqrt{x})}$$ ۵ ۰٫۵

$$\frac{(1-\sqrt{x})(1+\sqrt{x})(3+\sqrt{5-x})}{(x-1)(1+\sqrt{x})} \overset{x=1}{\Rightarrow} \frac{0}{0}$$

$$\lim \frac{-\frac{1}{2\sqrt{x}}}{-\frac{-1}{2\sqrt{5-x}}}=-2$$

$$\lim_{x\to 4}\frac{\sqrt{3x+4}-4}{\sqrt[3]{5x+7}-3}\times\frac{3+\sqrt{3x+4}}{3+\sqrt{3x+4}}\times\frac{\text{ق}}{\text{ق}}=$$ ۶

$$\frac{(3x+4-16)(\sqrt[3]{(5x+7)^2}+9+3\sqrt[3]{5x+7})}{(5x+7-27)(\sqrt{3x+4}+4)}=\frac{3(x-4)(\quad)}{5(x-4)(\quad)}$$

$$5x\to 20$$

$$=\frac{3(27)}{5(8)}=\frac{81}{40}$$

$$\frac{(1+\cos x)(1-\cos x+\cos^2 x)}{(1-\cos^2 x)}=\frac{(1+\cos x)(1-\cos x+\cos^2 x)}{(1-\cos x)(1+\cos x)}$$ ۸

$$=\frac{1-\cos x+\cos^2 x}{1-\cos x} \quad x=\pi \Rightarrow \frac{3}{2}$$ ۷

Arman

Subject:

Year: Month: Day:

page: ( )

(4)

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

(1.5)

$$\frac{\frac{\sin^2 x}{\cos^2 x}-1}{\cos^2 x-\sin^2 x} = \frac{\frac{\sin^2 x-\cos^2 x}{\cos^2 x}}{\cos^2 x-\sin^2 x} = \frac{-1}{\left(\frac{-\sqrt{2}}{2}\right)^2} = -2$$

Arman