

آل انبی شراہ میں اس وقت تک تکین 30

$$\lim_{x \rightarrow 1} \frac{x^2 - 2x + 1}{\omega x^2 - 1x + 1} \sim \frac{(x-1)(x-1)}{(x-1)(\omega x - 1)} \sim \frac{x-1}{\omega x - 1} \sim \frac{1}{\omega - 1}$$

$$\lim_{x \rightarrow 0} \frac{|4x-1| - |4x+1|}{x} \sim \frac{-(4x-1) - (4x+1)}{x} = \frac{-4x - 4x - 1 + 1}{x} = \frac{-8x}{x} = -8$$

$$\lim_{x \rightarrow 1} \frac{x-1}{\sqrt{x}-1} \sim \frac{(x-1)(\sqrt{x}+1)}{(\sqrt{x}-1)(\sqrt{x}+1)} = \frac{x-1}{x-1} = 1$$

$$\lim_{x \rightarrow 1} \frac{x - \sqrt{x}}{x^2 - x - 1} \sim \frac{x - \sqrt{x}}{(x+1)(x-1)} \times \frac{x + \sqrt{x}}{x + \sqrt{x}} = \frac{x^2 - x}{(x+1)(x-1)(x + \sqrt{x})}$$

$$\lim_{x \rightarrow 1} \frac{1 - \sqrt{x}}{x - \sqrt{x}} \sim \frac{1 - \sqrt{x}}{x - \sqrt{x}} \times \frac{1 + \sqrt{x}}{1 + \sqrt{x}} = \frac{(1-x)(1+\sqrt{x})}{(x-\sqrt{x})(1+\sqrt{x})} = \frac{1-x}{x-\sqrt{x}}$$

$$\lim_{x \rightarrow \epsilon} \frac{\sqrt{x+\epsilon} - \epsilon}{\sqrt{x+\epsilon} - \epsilon} = \frac{x(x+\epsilon)}{\omega(x+\epsilon)(\sqrt{x+\epsilon} + \epsilon)} \sim \frac{x}{\omega(\sqrt{x+\epsilon} + \epsilon)}$$

$$\lim_{x \rightarrow 1} \frac{\sqrt{x+\sqrt{x}} - 1}{\sqrt{x} - 1} \sim \frac{(\sqrt{x}-1)(\sqrt{x+\sqrt{x}}+1)}{(\sqrt{x}-1)(\sqrt{x}+1)(\sqrt{x+\sqrt{x}}+1)} = \frac{1}{\sqrt{x}+1}$$

$$\lim_{x \rightarrow \pi} \frac{1 + \cos^2 x}{\sin^2 x} \sim \frac{(1 + \cos^2 x)(1 - \cos^2 x + \cos^2 x)}{(1 - \cos^2 x)(1 + \cos^2 x)(1 - \cos^2 x)} = \frac{1 - (-1) + 1}{1 - (-1)}$$

$$\lim_{x \rightarrow \frac{\pi}{2}} \frac{1 - \tan x}{\sin x - \cos x} \sim \frac{\cos x - \sin x}{\sin x - \cos x} = \frac{-(\sin x - \cos x)}{-(\cos x - \sin x)} = 1$$

$$\lim_{x \rightarrow \frac{\pi}{2}} \frac{\cos^2 x}{\cos x} = \frac{(\cos x - \sin x)(\cos x + \sin x)}{(\cos x - \sin x)(\cos x + \sin x)} = \frac{\cos x}{\cos x + \sin x} \sim \frac{1}{1+1} = \frac{1}{2}$$