

Subject: ()

mu = ...

Date:

$$\lim_{x \rightarrow 1} \frac{e^{2x} - \sqrt{2x+1}}{2x^2 - 1} \stackrel{(L'Hop)}{\sim} \frac{2e^{2x} - \frac{1}{\sqrt{2x+1}}}{4x - 2} \stackrel{1}{\sim} \frac{1}{2} \quad (1)$$

$$\lim_{x \rightarrow 0} \frac{1^x - 1 - 1^x + 1}{x} \sim \frac{1 - 2^x - 2^x + 1}{x} \sim \frac{-4x}{x} \sim -4 \quad (2)$$

$$\lim_{x \rightarrow c} \frac{x - c}{\sqrt{x} - \sqrt{c}} \sim \frac{(\sqrt{x} - \sqrt{c})(\sqrt{x} + \sqrt{c})}{(\sqrt{x} - \sqrt{c})} \sim \sqrt{x} + \sqrt{c} \sim \sqrt{c} + \sqrt{c} = 2\sqrt{c} \quad (3)$$

$$\lim_{x \rightarrow 1} \frac{x - \sqrt{x}}{2x^2 - x - 1} \sim \frac{\sqrt{x}(\sqrt{x} - 1)}{(\sqrt{x} + 1)(2x + 1)} \sim \frac{\sqrt{x}}{(\sqrt{x} + 1)(2x + 1)} \stackrel{1}{\sim} \frac{1}{1 \cdot 3} = \frac{1}{3} \quad (4)$$

$$\lim_{x \rightarrow 1} \frac{1 - \sqrt{x}}{x - \sqrt{x} - x} \times \frac{1 + \sqrt{x}}{1 + \sqrt{x}} \times \frac{x + \sqrt{x} - x}{x + \sqrt{x} + x} \sim \frac{(1 - \sqrt{x})(x + \sqrt{x} - x)}{(1 + \sqrt{x})(1 + \sqrt{x})} \sim \frac{1}{3} \quad (5)$$

$$\frac{x + \sqrt{x} - x}{1 + \sqrt{x}} \sim \frac{-x + \sqrt{x}}{1 + \sqrt{x}} \sim \frac{-x}{1 + \sqrt{x}}$$

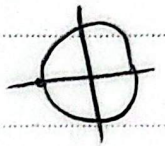
$$\lim_{x \rightarrow c} \frac{\sqrt[3]{2x+c} - c}{\sqrt[3]{2x+c} - c} \times \frac{\sqrt[3]{2x+c} + c}{\sqrt[3]{2x+c} + c} \times \frac{\sqrt{(2x+c)^2 + 9} + \sqrt[3]{2x+c}}{\sqrt{(2x+c)^2 + 9} + \sqrt[3]{2x+c}} \sim \frac{A}{A} \quad (6)$$

$$\frac{c(2+c)(A)}{2(2+c)(\sqrt[3]{2+c} + c)} \sim \frac{c}{2} \times \frac{2c}{1} \sim \frac{11}{2} \quad (7)$$

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

$$= \frac{(\sqrt{x^2 + \sqrt{x}} - x)(A)}{(x-1)(\sqrt{x^2 + \sqrt{x}} + x)} \cdot \frac{\sqrt{x^2 + 1} + \sqrt{x}}{\sqrt{x^2 + 1} + \sqrt{x}} \cdot \frac{(\sqrt{x^2 + 1} + \sqrt{x})(A)}{(\sqrt{x^2 + 1} + \sqrt{x})(\sqrt{x^2 + \sqrt{x}} + x)}$$

$$\frac{V \times W}{Y \times N} = \left(\frac{21}{1} \right)$$



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

$$\left(\frac{2}{1} \right)$$

$$\lim_{x \rightarrow \frac{\pi}{4}} \frac{1 - \tan x}{\sin x - \cos x} = \frac{\frac{\cos}{\sin} - 1}{\sin \cos} = \frac{1}{\cos x} = \sqrt{2} \quad (9)$$

$$\lim_{x \rightarrow \frac{\pi}{4}} \frac{\tan^2 x - 1}{\cos^2 x} = \frac{\frac{\sin^2}{\cos^2} - 1}{\cos^2 x} = \frac{-1}{\cos^2 x} = -2 \quad (1.)$$