

Answer on Question #40987 – Math – Other

solve it

$$\lim_{x \rightarrow 0} \frac{(e^{\tan x} - e^x)/(\tan x - x)}$$

Solution:

$$\lim_{x \rightarrow 0} \frac{e^{\tan x} - e^x}{\tan x - x} = \left[\frac{0}{0} \right] = [e^{\tan x} - 1 \sim \tan x, x \rightarrow 0] = \lim_{x \rightarrow 0} \frac{\tan x + 1 - (x+1)}{\tan x - x} = \lim_{x \rightarrow 0} \frac{\tan x - x}{\tan x - x} = 1.$$

Answer: 1.