$\lim_{n\to\infty} \sum_{i=1}^{n} \frac{\pi}{8n} \tan \frac{i\pi}{8n}$ can be interpreted as the area of the region lying under the graph of $y = \tan x$ on the interval $\left[0, \frac{\pi}{8}\right]$, since for $y = \tan x$ on $\left[0, \frac{\pi}{8}\right]$ with $\Delta x = \dfrac{\pi/8 - 0}{n} = \dfrac{\pi}{8n}$, $x_i = 0 + i\,\Delta x = \dfrac{i\pi}{8n}$, and $x_i^* = x_i$, the expression for the area is

$$A = \lim_{n\to\infty} \sum_{i=1}^{n} f\left(x_i^*\right) \Delta x = \lim_{n\to\infty} \sum_{i=1}^{n} \tan\left(\frac{i\pi}{8n}\right) \frac{\pi}{8n}.$$

Note that this answer is not unique, since the expression for the area is the same for the function $y = \tan(x - k\pi)$ on the interval $\left[k\pi, k\pi + \frac{\pi}{8}\right]$, where k is any integer.