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$$\lim_{x\to 2}\left(\sqrt[5]{3^x+x-10}-1\right)\operatorname{tg}\sin\pi x$$

$y=x-2 \qquad x=y+2$

$$\lim_{y\to 0}\left(\sqrt[5]{3^{y+2}+y+2-11+1}-1\right)\operatorname{tg}\sin\pi(y+2)=$$

$$=\lim_{y\to 0}\left(\sqrt[5]{3^{y+2}+y-9+1}-1\right)$$

$$\lim_{y\to 0}\left(\frac{\sqrt[5]{(3^{y+2}+y-9)+1}-1}{3^{y+2}+y-9}\right)(3^{y+2}+y-9)\log\frac{\operatorname{sen}\pi y}{\pi y}\cdot \pi y =$$

$$= 0 + \lim_{\cancel{y\to 0}} \frac{1}{5}\lim_{y\to 0}(3^{y+2}+y-9)\log \pi y =$$

$$= \frac{1}{5}\lim_{y\to 0}\frac{3^{y+2}-9+1}{y}\cdot$$

$$= \frac{1}{5}\lim_{y\to 0}\left(\frac{3^{y+2}-9}{y}+1\right) y \log \pi y$$

$$= \frac{1}{5}\lim_{y\to 0}\left(\frac{9}{\pi}\,\frac{3^{y}-1}{y}\cdot \pi y \log \pi y + \frac{1}{\pi}\cdot \pi y \log \pi y\right) =$$

$$= \frac{1}{5}\left(\frac{9}{\pi}\log 3\cdot 0 + \frac{1}{\pi}\cdot 0\right) = 0$$