№9. $\lim\limits_{x \to -2} \frac{\operatorname{tg} \pi x}{x+2} = \left\{ \frac{0}{0} \right\} = \left| \begin{array}{l} \text{пусть } t = x+2, \\ \text{тогда } x = t-2, \\ \text{при } x \to -2, \\ t \to 0. \end{array} \right| = \lim\limits_{t \to 0} \frac{\operatorname{tg}(-2\pi + \pi t)}{t} = \left| \frac{\operatorname{tg} \pi t}{t} = \right.$

$= \left| \begin{array}{l} \text{при } \alpha \to 0, \\ \operatorname{tg} \alpha \sim \alpha \end{array} \right| = \lim\limits_{t \to 0} \frac{\pi t}{t} = \pi.$