

~10.

$$\begin{aligned}\lim_{n \rightarrow \infty} \left( \frac{n-1}{n+1} \right)^{n^2} &= \left\{ 1^\infty \right\} = \lim_{n \rightarrow \infty} \left( \frac{n+1-2}{n+1} \right)^{n^2} = \lim_{n \rightarrow \infty} \left( 1 + \frac{2}{-1-n} \right)^{\frac{-1-n}{2} \cdot \frac{2n^2}{-n-1}} \\ &= \lim_{n \rightarrow \infty} e^{\frac{2n^2}{-n-1}} = \lim_{n \rightarrow \infty} e^{\frac{2n^2}{-n(1+\frac{1}{n})}} = \lim_{n \rightarrow \infty} e^{-2n} = 0.\end{aligned}$$