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$$\lim_{x \rightarrow 0^+} \left( |x + \log_7 \sin x| - \cot_7 x^2 \right)$$

$$\lim_{x \rightarrow 0^+} \cot_7 x^2 \left( \frac{|x + \log_7 \sin x|}{\cot_7 x} - 1 \right)$$

$$= \lim_{x \rightarrow 0^+} \cot_7 x^2 \left( \left| \frac{x}{\cot_7 x^2} + \frac{\log_7 \sin x}{\cot_7 x^2} \right| - 1 \right)$$

$$= \lim_{x \rightarrow 0^+} \cot_7 x^2 \left( \left| \overset{0}{\frac{x \sin x^2}{\cos x^2}} + \frac{\log_7 \sin x}{\cot_7 x^2} \right| - 1 \right)$$

$$= \lim_{x \rightarrow 0^+} \cot_7 x^2 \left( |0| - 1 \right) = \infty$$

$$\lim_{x \rightarrow +\infty} \left( \cos \right)$$

$$= \lim_{x \rightarrow +\infty} e$$

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$$= e$$