

(in) 1-4

✓

次の極限値を求めよ。

(1) $\lim_{x \rightarrow \infty} \frac{\sin 4x}{x}$

(2) $\lim_{x \rightarrow +0} \frac{\sin 2x}{\tan x}$

(3) $\lim_{x \rightarrow \infty} \frac{1 - \cos x}{x^2 \cos x}$

4) $\lim_{x \rightarrow 0} \frac{\sin 4x}{4x} \cdot 4 = 4$

(2) $\lim_{x \rightarrow +0} \frac{\sin 2x}{2x} \cdot \frac{2x}{\frac{\sin x}{\cos x}} = \lim_{x \rightarrow +0} \frac{\sin 2x}{2x} \cdot \frac{x}{\sin x} \cdot 2 \cos x = 2$

(3) $\lim_{x \rightarrow 0} \frac{(1 - \cos x)(1 + \cos x)}{x^2 \cos x (1 + \cos x)} = \lim_{x \rightarrow 0} \frac{\sin^2 x}{x^2} \cdot \frac{1}{\cos x (1 + \cos x)} = \frac{1}{2}$