

$$\begin{aligned} & \lim_{x \rightarrow 0} \frac{\sqrt{1+x} - \sqrt{1-x}}{x} \\ &= \lim_{x \rightarrow 0} \frac{(\sqrt{1+x} - \sqrt{1-x})(\sqrt{1+x} + \sqrt{1-x})}{x(\sqrt{1+x} + \sqrt{1-x})} \\ & \quad \text{分母・分子を } (\sqrt{1+x} + \sqrt{1-x}) \text{ 倍} \\ &= \lim_{x \rightarrow 0} \frac{(1+x) - (1-x)}{x(\sqrt{1+x} + \sqrt{1-x})} \end{aligned}$$

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章末問題 1.6(5)

解答

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$$\begin{aligned}& \lim_{x \rightarrow 0} \frac{\sqrt{1+x} - \sqrt{1-x}}{x} \\&= \lim_{x \rightarrow 0} \frac{2x}{x(\sqrt{1+x} + \sqrt{1-x})} \\&= \lim_{x \rightarrow 0} \frac{2}{\sqrt{1+x} + \sqrt{1-x}} = 1\end{aligned}$$