

9. 連続写像と点列の収束

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9.1 収束する数列は?

$$[\mathbf{A}] \quad x_n = \begin{cases} 100 & (n < 100) \\ 1/n & (n \leq 100) \end{cases}$$

$$[\mathbf{B}] \quad x_n = \frac{(-1)^n}{n}.$$

$$[\mathbf{C}] \quad x_{2n} = \frac{1}{n}, x_{2n+1} = 1.$$

$$[\mathbf{D}] \quad x_{2n} = \frac{1}{n}, x_{2n+1} = 0.$$

9.2 極限は?

$$f(x) = \begin{cases} +1 & x > 0 \\ 0 & x = 0. \\ -1 & x < 0 \end{cases}$$

$$x_n = \frac{1}{n}.$$

$$\lim_{n \rightarrow \infty} f(x_n) = ?$$

[A] +1

[B] -1

[C] 0

[D] 収束しない.

9.3 極限は?

$$f(x) = \begin{cases} +1 & x > 0 \\ 0 & x = 0. \\ -1 & x < 0 \end{cases}$$

$$x_n = \frac{(-1)^n}{n}.$$

$$\lim_{n \rightarrow \infty} f(x_n) = ?$$

[A] +1

[B] -1

[C] 0

[D] 収束しない.

9.4 極限は?

$$f(x) = \begin{cases} +1 & x > 0 \\ 0 & x = 0. \\ -1 & x < 0 \end{cases}$$

$$x_{2n} = (-1)^n \frac{1}{n}, x_{2n+1} = 0.$$

$$\lim_{n \rightarrow \infty} f(x_n) = ?$$

[A] +1

[B] -1

[C] 0

[D] 収束しない。