Demo

noflowerzzk

1 $\mathcal{A}$

已知 $\lim\limits_{n\to\infty} x_n = A, y_n > 0, \lim\limits_{n\to\infty} \dfrac{y_n}{y_1 + y_2 + \cdots + y_n} = 0$

证明: $\lim\limits_{n\to\infty} \dfrac{x_1 y_n + x_2 y_{n-1} + \cdots + x_n y_1}{y_1 + y_2 + \cdots + y_n} = A.$

2 $\mathcal{B}$

$$\lim_{x\to 0} \frac{1 - \cos x \cos 2x \cdots \cos nx}{x^2} = \lim_{x\to 0} \frac{\sum\limits_{k=1}^{n} \cos x \cos 2x \cdots \sin kx \cdots \cos nx}{2x} = \frac{n(n+1)}{4}$$