① 求极限 lim f[sin fil + sin fill + ... + sin fill]

小信,定部方面定义!!

把区间 [a,b] 分为 n 绐,气积每个区间 丽石丝版。则 $\lim_{n\to\infty} \frac{b}{n} \stackrel{\circ}{\lesssim} f(a + \frac{b}{n}i) = \int_{a}^{b} f(x) dx$.

 $\Rightarrow \lim_{n\to\infty} \frac{1}{n!} f(\vec{k}) = \int_0^1 f(x) dx \quad (then a = 0, b = 1)$

② 设函数 fin 左闭巴间 [0,1]上每连续的一阶导数,且fin 不恒为 0. 若 f(n) = 0 [n=1,2,....) 证明: (i). f(o) = 0, (i). f(o) = 0.

海涅定理: lim f(x)= A <=> lim xn = xo, f(xo)=A ⇒ lim f(xn)=A.
由罗尼亚里.

在巴间[m], 市]上, 冠(e[m], 市], 使 $f(\xi_n) = o(n=1,2,...)$. 图 $\lim_{n\to\infty} \xi_n = 0$.

故 $f(x) = \lim_{n \to \infty} f(x) = \lim_{n \to \infty} f(x_n) = 0$. (海涅主理)

外省: 对定义的理解

$$\mathbb{R} \dot{\chi} = \frac{1}{\pi} \lim_{n \to \infty} \frac{1}{n} \int_{0}^{\pi} \sqrt{\frac{1}{1 + \cos x}} \, dx = \frac{1}{\pi} \int_{0}^{\pi} \cos \frac{x}{2} \, dx$$

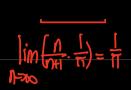
$$= \frac{\sqrt{2}}{11} \cdot 2 \cdot \sin \frac{\alpha}{2} \left| \frac{\pi}{0} \right| = \frac{2\sqrt{2}}{11}.$$

原式=2 lim
$$\frac{1}{n}$$
 $\sum_{i=1}^{n}$ ln $(l+\frac{2}{n}) = 2$ lim \int_{0}^{1} ln $(l+x)dx = 2$ $\frac{1}{l+x}\Big|_{0}^{1} = -1$.

$$\frac{1}{100} \left[\frac{\sin \frac{\pi}{n}}{n+1} + \frac{\sin \frac{\pi}{n}}{n+\frac{\pi}{2}} + \cdots + \frac{\sin \pi}{n+\frac{\pi}{n}} \right].$$

$$\int_{\mathbb{R}} \int_{\mathbb{R}} \left\{ -\frac{1}{n} \left[S_{n} \frac{\pi}{n} + S_{in} \frac{\pi}{n} \pi + \cdots + S_{in} \frac{\pi}{n} \pi \right] = \frac{1}{n} \sum_{i=1}^{n} S_{in} \frac{\pi}{n} \pi = \frac{2}{n} \right\}$$

原於 >
$$\frac{1}{nH}$$
 [$\sin \pi + \sin \pi + \cdots + \sin \pi = \frac{1}{nH} \cdot \pi$ · 开之 $\sin \pi = \frac{2}{nH}$



故原	家式 =	2 T.	7	表篇等	aid wa	<u>4</u> /	A	
		., ,		V Janes		۲)	2 1	