n

$$S_n = \sum_{k=1}^{n} a_k$$
(1)
$a_n \leq$
$b_n \sum_{n=1}^{\infty} b_n \sum_{n=1}^{\infty} a_n \sum_{n=1}^{\infty} a_n \sum_{n=1}^{\infty} b_n$

$$\lim_{n\to\infty} a_n b_n = \lambda$$
(2)
$\lambda >$
0
$\lambda =$
$0 \sum_{n=1}^{\infty} b_n \sum_{n=1}^{\infty} a_n$
$\lambda =$
$+\infty \sum_{n=1}^{\infty} a_n \sum_{n=1}^{\infty} b_n$
$\sum_{n=1}^{\infty} a_n f(n) =$
$a_n \int_1^{+\infty} f(x) x$
$\sum_{n=1}^{\infty} a_n$

$$\lim_{n\to\infty} a_{n+1} a_n = \lambda$$
(3)
$\lambda <$
1
$\lambda >$
1
$\lambda =$
1
$\sum_{n=1}^{\infty} a_n$

$$\lim_{n\to\infty} \sqrt[n]{a_n} = \lambda$$
(4)
$\lambda <$
1
$\lambda >$
1
$\lambda =$
1
$\sum_{n=1}^{\infty} (-1)^{n-1} a_n a_n S_n a_{n+1}$

$$|S - S_n| \leq a_{n+1}$$
(5)
$\sum_{n=1}^{\infty} |a_n|$
$\sum_{n=1}^{\infty} u_n(x) x_0$
S

$$\forall \epsilon > 0, \exists N(\epsilon) \in N_+, s.t. when n > N(\epsilon), \forall x \in D, always |S_N(x) - S(x)| < \epsilon$$
(6)
S
D

$$\forall \epsilon > 0, \exists N(\epsilon) \in N_+, \forall n, p \in N_+, n > N(\epsilon), \forall x \in D, |S_{n+p}(x) - S_n(x)| = |\sum_{k=n+1}^{n+p} u_k(x)| < \epsilon$$
(7)
M
$\sum_{n=1}^{\infty} M_n |n_n(x) \leq$
$M_n | D$
$u_n \in$
$C(I) ISS$
$$\sum_{n=0}^{\infty} a_n x^n \sum_{n=0}^{\infty} a_n (x - x_0)^n$$
(8)
Abel
$[-R, R]$
$\lim_{n\to\infty} 1 \sqrt[n]{|a_n|}$
$R =$
$\lim_{n\to\infty} |a_n a_{n+1}|$

$$e^x = 1 + x + x^2 2! + ... + x^n n! + ...$$
(9)