72. Test for convergence: $\sum_1 \frac{1^3+2^3+\cdots+n^3}{(n+1)!}$

73. Discuss convergence:

a) $\sum_1 [\frac{1.\cdots(2n-1)}{2\cdots(2n)}]^p$ b) $\sum_1 |\frac{1.\cdots(2n-1)}{2\cdots(2n)}\frac{4n+3}{2n+2}|^2$

74.Test for convergence:

a) $\sum_1 \frac{1}{(2n-1)(2n+1)}$ b) $\sum_1 \frac{1}{1+e^{1/n}}$

75.Test for convergence by comparison:

a) $\sum_2 \frac{1}{n^3-1}$ b) $\sum_1 \frac{sinn}{n^3}$ c) $\sum_0 \frac{n+5}{n^2-3n-5}$ d) $\sum_2 \frac{1}{\sqrt{n}lnn}$

76. Show convergence of

a) $\sum_0 e^{-a_n}$ b) $\sum_0 ln(1-\frac{1}{a_n})$

where $a_n > 0$ and $a_n \to \infty$.

77. Find the sums:

a) $\sum_{(1)} \frac{1}{(2n+1)(2p+2n+1)}$ b) $\sum_1 \frac{n(n+1)}{(n+2)(n+3)(n+4)(n+5)}$

, $(p\epsilon N)$

78.Test for convergence:

a) $\sum_0 (\frac{n+1}{n+2})n^2$ b) $\sum_1 (\frac{(n-1)(n-2)}{n^2})n^2$

79. If $\sum u_n$, $\sum v_n$ are series of positive terms, show that

a) $\sum G_n$ b) $\sum H_n$

are convergent, where H_n, G_n are geometric and harmonic means of u_n,v_n respectively.

80.Test for convergence:

a) $\sum_1 \frac{1}{a^n+n^{1/a}}$ b) $\sum_1 asin\frac{1}{n}, (a \neq 0)$

81.Test for convergence: