

ESP Quiz 7 (Kouba)

Please PRINT your name here : -----

This quiz is due next Tuesday at the beginning of ESP.

1.) (10 pts. each) Do the following series converge or diverge ? Briefly explain and name the test that you are using.

a.)
$$\sum_{n=7}^{\infty} \left(\frac{1}{\ln n} - \frac{1}{\ln(n+1)} \right)$$

b.)
$$\sum_{n=1}^{\infty} (-1)^{n+2} \frac{1}{(n+3)^2}$$

c.)
$$\sum_{n=3}^{\infty} \frac{5^{n-1}}{(2n)!}$$

d.)
$$\sum_{n=2}^{\infty} \frac{3^{n^2}}{(n!)^n}$$

2.) (10 pts.) The p -series $\sum_{n=1}^{\infty} \frac{1}{n^3}$ converges. What should n be in order that the partial sum s_n estimate the exact value of this series with an error of at most 0.000001 ? HINT : Use (**) from the Integral Test class handout.