Homework 9

Due Monday, November 3, 2008

On these problems, you are asked to determine whether or not certain series converges. Be sure to mention which test you are using, and to describe how you applied the test.

(a) On page 596, in section 12.4, do problems: 3, 5, 8, 14, 16, 17, 21, 22, 31, 34.

(b) For which positive real numbers x does the series $\displaystyle\sum_{n=1}^{\infty} \frac{x^n}{n}$ converge?

(c) For which positive real numbers x does the series $\displaystyle\sum_{n=0}^{\infty} \frac{x^n}{n!}$ converge? Remember, $0! = 1$.

(d) For which positive real numbers x does the series $\displaystyle\sum_{n=0}^{\infty} (n+1)\, x^n$ converge?

(e) For which positive real numbers x does the series $\displaystyle\sum_{n=0}^{\infty} n!\, x^n$ converge?