

MA 129 - Homework - October 18, 2007

Infinite Series - Definition of Convergence and Basic Properties

Basic Problems from Stewart: 8.2: 1, 9, 14, 15, 17, 19 - 23, 25, 26, 30, 33

More Difficult Problems from Stewart: 8.2: 41, 42, 45, 49, 50 - 53, 55 a) , 57.

1) In 8.2/ 50 you are asked to show:

If $\sum_{n=1}^{\infty} a_n$, $a_n \neq 0$ converges then $\sum_{n=1}^{\infty} 1/a_n$ diverges.

Is the converse true, i.e.

Suppose $\sum_{n=1}^{\infty} a_n$, $a_n \neq 0$ diverges. Can we conclude $\sum_{n=1}^{\infty} 1/a_n$ converges ? Why or why not ?