Math 208 Homework 7.

Problems from P.M. Fitzpatrick, Advanced Calculus.

Section 9.1, p.239: Problems: 1, 3, 7, 8

Section 9.2, p.244 : Problems: 1, 2, 3, 4 ,6

and the following problems:

Problem 1. Let $\{b_n\}$ be a sequence that convrges to the number b. Show that the series

$$\sum_{n=1}^{\infty}(b_{n+1} - b_n) = b - b_1.$$

Problem 2. Show that if the series

$$\sum_{n=1}^{\infty}(a_n)^2$$

is convergent, then the series

$$\sum_{n=1}^{\infty}\frac{|a|}{n}$$

is also convergent.

Problem 3. Show the convergenc eof the series

$$\sum_{n=1}^{\infty}\frac{1}{n^2}$$

by using Cauchy's criterion.