Assignment #7

Due on Monday September 29, 2008

Read Section 7,1 on *Limits,* pp. 171–178, in Bressoud.

Do the following problems

1. Let U denote an open subset of $\mathbb{R}^n$. Suppose that $f \colon U \to \mathbb{R}$ is a scalar field and $G \colon U \to \mathbb{R}^m$ is vector valued function.

   (a) Explain how the product fG is defined.

   (b) Prove that if both f and G are continuous on U, then the vector valued function fG is also continuous on U.

2. Exercise 3 on page 178 in the text.

3. Exercise 4 on pages 178 and 179 in the text.

4. Exercise 11 on page 180 in the text.

5. Exercise 12 on page 180 in the text.