FOUNDATIONS OF ANALYSIS  
Spring 2009  

QUIZ #2 REFERENCE  

Following is a copy of the directions for the quiz.  

This quiz consists of three questions. No partial credit will be assigned. On each of the questions one can earn a maximum of one point. Please work without the aid of notes, books, calculators, computers and other people.  

One can prepare for the quiz by preparing the following:  

• definitions and theorem statements  
  1. function  
  2. field  
  3. ordered field  
  4. absolute value function  
  5. least upper bound property  
  6. real numbers  
  7. integers  
  8. induction theorem  
  9. closure of an interval  
  10. rational number  
  11. irrational number  
  12. sequence  
  13. finite sequence  
  14. infinite sequence  
  15. convergent sequence  
  16. sequence converges to a real number  
  17. limit of a sequence in \( \mathbb{R} \)  
  18. sequence converges to infinity  
  19. Cauchy sequence  
  20. geometric series  
  21. real-valued function continuous at a point  

• the true/false questions for Chapter #4  

• proof of fact that given \( x \in \mathcal{F} \) ordered by \( \mathcal{F}^+ \) that \( x \in \mathcal{F}^+ \) if and only if \( x > 0 \). (Notes, p.31).  

• proof of fact that a non-empty set of integers that is bounded below contains a least element (Notes, p.35).