

Mathematics 116

Convexity and Optimization with Applications

- Diagnostic In class, closed book, on Tuesday, March 8.
- Announcements Put your name at the top of your paper and hand in your diagnostic to replace your lowest homework grade by the next highest score.
- Questions
1. What is the most important thing you have learned so far and why?
 2. What are the most important questions or confusions you still have?
 3. (a) Define what it means for a sequence in a normed linear space X to be Cauchy. (b) Show that such a Cauchy sequence must be bounded.
 4. (a) Define what it means for a real-valued function f on a normed linear space X to be continuous. (b) Show that $f(x) = \|x\|$ is continuous.
 5. Show that a continuous function f on a compact set M in a normed linear space attains its maximum on M .
 6. Given an example of a normed linear space with real scalars that is not complete. How do you know it's incomplete?
 7. What other suggestions or advice do you have that would improve the course or the way that you are learning this material?