Math. 455-01
Spring, 2016
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Second Exam
Thursday, March 10, 2016

This exam is open-book, and you may use the computer on your desk. Make sure your name is on all pages. Show all work, and show it in a logical and organized manner. Each entire problem is worth 20 points.

1. Do problem 3 from Chapter 2.

2. Consider `newton.m`.

   (a) Modify line 45 so the `sprintf` statement also prints `fval`/(previous `fval`)^2. (Note you will need to put in an additional line or two to store the previous fval.)

   (b) Run this with $f(x) = x^4 - 1000$, starting with $x_0 = 100$.

   (c) What do you observe about the ratios `fval`/(previous `fval`)^2? Can you explain this in terms of convergence rates?