

Mathematics 502 Problem Set 4

Due Friday, December 6, 2002

By submitting a paper for this assignment you declare that you are not submitting any unattributed work of any other person.

1. Implement a model trust region algorithm for Newton's method for unconstrained optimization. Use either the locally constrained optimal step or the "double dogleg" step. Demonstrate your code's performance on the Rosenbrock banana function.

Feel free to develop your implementation by modifying the code `optn.m` in the `Examples/Optim` directory on the course web site.

2. Solve Exercise 8.5 #3 on page 191 of Dennis & Schnabel.

3. Prove Exercise 8.5 #6 on page 191 of Dennis & Schnabel.

4. Prove Exercise 9.7 #14 on page 214 of Dennis & Schnabel.