

Homework Assignment 1

M-Estimation: In this assignment you will explore the general theory of M-estimation from a relatively high level; i.e., under the assumption that necessary regularity conditions hold. In particular, you are going to write a report over the paper *The Calculus of M-Estimation* written by Leonard Stefanski and Dennis Boos in 2002. The general theory of M-Estimation has become important for asymptotic analysis and approximate inference. Your report should cover sections 1, 2, 4, and 5. Further, you should carefully and methodically go through and work out the details to examples 1-3, 6, and 8.

For the results obtained in examples 1-3, write a small simulation study that examines the behavior of these results.