

**AMS-205B WINTER 2016
HOMEWORK 5**

All problems refer to Casella & Berger, Statistical Inference, Second Edition, Duxbury.

- (1) Problem 9.3.
- (2) Problem 9.4.
- (3) Problem 9.12.
- (4) Problem 8.13.
- (5) Problem 10.40.
- (6) Let X_1, \dots, X_n be a random sample such that $X_i \sim \text{Uni}[0, \theta]$.
 - (a) Find an *exact* confidence interval based on the maximum likelihood estimator for θ . Can you use the results discussed in class for the asymptotic distribution of the MLE to construct an approximate interval for this problem?
 - (b) Find an *approximate* Wald-type confidence interval for θ based on the method of moments estimator for θ . How does this interval compare with the exact interval you generated before?