

HOMEWORK ASSIGNMENTS**Homework #6****Assigned: 12/1/12****Due: 12/11/12**

1. (a) Problem 11.5 in John Freund's text book.
(b) Problem 11.6 in John Freund's text book.
(c) Problem 11.29 in John Freund's text book.

2. Let X_1, \dots, X_n be a random sample from a population which has a uniform distribution on $(0, \theta)$, $\theta > 0$.
 - a. Find a $100(1 - \alpha)\%$ equal-tail interval estimator of θ .
 - b. Find a $100(1 - \alpha)\%$ *shortest* interval estimator of θ .
 - c. Compare the lengths (a) and (b) for $n = 10$, 90%, 95% and 99% confidence intervals.

3. Problem 11.11 in John Freund's text book.

4. Problem 12.1 in John Freund's text book

5. (a) Problem 12.7 in John Freund's text book.
(b) Problem 12.9 in John Freund's text book.

6. Let X be a single observation from the exponential distribution with parameter θ . Consider testing $H_0 : \theta \leq \theta_0$ versus $H_1 : \theta \geq \theta_0$. Find the form of a *uniform most powerful test*. Find the power function of the test, and show that it is increasing in θ . Then, determine a size α UMP test completely.