

Mathematics/Statistics 566 - Theory of Statistics

Exam I - Practice Questions

Questions from the textbook *Statistical Inference*

Chapter 6

1. Fisher-Neyman factorization 6.1 through 6.6

2. minimal sufficient 6.9 a-c

3. ancillarity 6.13, 6.14, 6.40

4. completeness 6.22

4.2 $X_1, \dots, X_n \sim N(\theta, \theta^2)$. Show $T = (\sum_{i=1}^n X_i, \sum_{i=1}^n X_i^2)$ is not complete.

5. exponential family 6.27

Chapter 7

1. maximum likelihood estimate 7.2a, 7.6, 7.10, 7.15a

2. method of moments 7.11, 7.12a

3. UMVUE 7.37, 7.40, 7.46