

ECE531 Homework Assignment Number 7

Due by 8:50pm on Wednesday 30-Mar-2011

Make sure your reasoning and work are clear to receive full credit for each problem.

1. 4 points. Kay I: 2.6.
2. 5 points total.
 - (a) 3 points. Kay I: 5.3. Please find a *complete* sufficient statistic and prove that it is complete.
 - (b) 2 points. Use the RBLT theorem to find a MVU estimator of the non-random parameter λ .
3. 4 points. Kay I: 5.7. Of course, the observations y_0, \dots, y_{N-1} are a sufficient statistic for estimating f_0 , but what this problem wants you to show is that a more concise sufficient statistic does not exist.
4. 4 points. Kay I: 5.13. Do not assume the sufficient statistic is complete; prove it.
5. 4 points. Kay I: 5.17 only part (a). Do not assume the sufficient statistic is complete; prove it.
6. 4 points. Kay I: 5.18. Try to find a minimal sufficient statistic. You do not need to determine if your sufficient statistic is complete.