

Stat 543 HW #7

(Not to be collected, but fair game on Exam II, April 4, 2016)

Intro to Testing, Neyman-Pearson Lemma, Bayes Tests

1. Problems 4.1.1, 4.1.3, 4.2.1, 4.2.3 of B&D
2. (Optional only, recommended but not required) Problems 4.1.5, 4.1.6, 4.2.4, 4.2.5 of B&D
3. If $X \sim \text{Poisson}(\lambda)$ and a Bayesian uses a prior for λ that is Exponential with mean 1, what is the Bayesian's (0-1 loss) Bayes test of $H_0 : \lambda \leq 2$ versus $H_0 : \lambda > 2$?
4. If $X \sim \text{Binomial}(5, p)$ and a Bayesian uses a prior for p that is Beta $(2, 1)$, what is the Bayesian's (0-1 loss) Bayes test of $H_0 : .4 \leq p \leq .6$ versus $H_0 : p < .4$ or $p > .6$?