

First problem set (from the lecture notes), due Friday, February 14, 2003

1. §1.1 #2
2. §1.1 #3(a)
3. §1.1 #5
4. §1.2 #1
5. In Example 1.1.2, if $0 < \pi(P) = 1 - \pi(Q) < 1$, $0 < L_{PQ} < \infty$, and $0 < L_{QP} < \infty$,
 - (a) Under what conditions on $\pi(P)$, L_{PQ} , and L_{QP} is $\{0\}$ a better test of P vs. Q than $\{2\}$ is?

(For a test set A , we choose Q and reject P if the observation is in A , otherwise we choose [don't reject] P .)
 - (b) Under the conditions found in (a), what is the Bayes test or decision rule (i.e. the rule with minimum risk) for deciding between P and Q based on one observation in the given sample space $\{0, 1, 2\}$?