Assignment 01

PUBH 8878

1. Laird, Section 2.4, Exercise 3
2. Laird, Section 2.4, Exercise 4
3. Laird, Section 2.4, Exercise 7
4. Consider a sample size of of unrelated haploid individuals is obtained from some population with the objective of estimating allele frequency at a biallelic locus. The sample contains copies of , and copies of .
   1. Plot the probability distribution of given , and . Plot the probability distribution of given , and .
   2. Lets say we observed samples, with copies of allele . Plot the likelihood function for
   3. What is the MLE of ?
   4. Let’s say , and . What is the sampling variance of ?
   5. Let’s say , and . What is the sampling variance of ? Why is this different than the result above?