

AMS 310 (01) — Review for Midterm II

1. Joint distribution, marginal distribution, conditional distribution.
2. Joint density, joint cumulative distribution, marginal density, conditional density for continuous random variables.
3. Criterion for independence using density or distribution functions.
4. Properties of expectation and variance.
5. Definition of a random sample. What is i.i.d.?
6. Central limit theorem.
7. What are sample mean and sample variance?
8. Distributions for sample means for large or small sample size when population variance known or unknown (list a table).
9. Point estimation for mean: biased or unbiased estimator.
10. Interval estimation for mean: confidence interval.
11. What are null and alternative hypothesis?
12. Definitions of type I and type II errors for tests of hypothesis.
13. Testing criteria concerning one mean.
14. Test criterion using p-value.
15. Computation for Type II error or operating characteristic curve.