Math 262 Reading Guide

Section 4.5.1–4.5.2 NAME

Read Section 4.5.1 and 4.5.2, and answer the following questions. *Hand in this worksheet at the next class.*

1. What is the definition of **independent and identically distributed (iid)** random variables?

2. What does the text mean by the **sample total** T and **sample mean** $\bar{X}$ of $X_1, \ldots, X_n$?

3. What does the Proposition say about the expected value and variance of T and $\bar{X}$? Observe how these properties are applied in Example 4.33.

4. What does the **Central Limit Theorem** say about the distributions of T and $\bar{X}$ as $n \to \infty$?

5. How is the normal cdf used in Example 4.35? Is it necessary to know the distribution of the amounts of impurities in each batch?