

Math 186, Winter 2009, Prof. Tesler
Homework #5, Due Monday February 9, 2009

Larsen & Marx **Fourth Edition:**

3.7# 9; in addition to what it asks, also (i) compute the marginal pdfs of X and Y ; (ii) determine if X and Y are dependent or independent.

3.7# 1, 7, 12, 19b, 38, 40

3.8# 1*, 6

3.9# 8, 16

3.11# 2, 4, 5, 9

and the problem below: H-9.

***Hints:**

3.8.1. (a) The sum for the pdf has the almost same format as the binomial theorem except it's been multiplied through by a constant. We'll learn the interpretation of these pdfs in Chapter 4.

(b) Each term of the sum is the same after you simplify.

Problem H-9. Two pea plants with genotype $TtRr$ are crossed and yield 21 offspring. T/t determines the plant height: T =tall, t =short, and T is dominant. R/r determines the pea shape: R =round, r =wrinkled, and R is dominant. Genes T and R are on different chromosomes. Use the multinomial distribution to determine the probability that 8 offspring are tall and round, 5 are tall and wrinkled, 6 are short and round, and 2 are short and wrinkled.

In chapter 3, we are covering 3.1–3.9 and 3.11.

In chapter 4, we will cover 4.1, 4.4–4.5 and then 4.2–4.3.