

Statistics 630 - Assignment 4
(due Friday, 1 October 2021)

View lectures 10–13.

1. Chapter 2 Exercises 2.7.3, 2.7.4(a,d – it suffices to express C as a fraction).
2. Chapter 2 Exercises 2.7.8, 2.7.9, 2.7.16.
3. Chapter 2 Exercise 2.7.10. You may use the result (without proof) in Exercise 2.7.13.
4. Chapter 2 Exercise 2.7.17. [This is a continuous analogue to the multinomial distribution.]
5. Chapter 2 Exercises 2.8.2, 2.8.3, 2.8.5, 2.8.7(a,d), 2.8.14, 2.8.15.
6. Suppose Y_1, \dots, Y_n is a random sample from the $\text{beta}(\alpha, 1)$ distribution. Find the cdfs and pdfs for $Y_{(1)} = \min(Y_1, \dots, Y_n)$ and $Y_{(n)} = \max(Y_1, \dots, Y_n)$. Are either of these beta random variables?
7. Suppose Y_1, \dots, Y_n is a random sample from the $\text{Weibull}(\alpha, 1)$ distribution (recall Exercises 2.4.19 and 2.5.21). Find the cdf and pdf for $Y_{(1)} = \min(Y_1, \dots, Y_n)$. Show that this is another Weibull distribution.