

Assignment 11
Due Wednesday 12/3

Exercises: (P = Problems, TE = Theoretical Exercises)

Chapter 7: P 6* and 31*, 15*, 18*, 19, 33, 34, 40*, 41*, 45*

*Problems marked with an asterisk will be collected and graded. Remember to *explain* how you arrive at your answers.

At least one of these problems (15) does not appear in the fifth edition of the text, and some of the numbers of the other problems have changed.

Hints and instructions: For problems 6 and 31, 15, 18, 19(b), 34, and 41 the trick is to write the RV's in which you are interested as a sum of simpler RV's—usually indicator (Bernoulli) RV's. **You must describe very explicitly the simpler RV's you introduce.** Don't be at all vague; say exactly what numerical quantity (as an experimenter might record it) the random variable represents. For example, in problem 15 you might say “For $1 \leq i < j \leq n$ let X_{ij} denote a random variable with $X_{ij} = 1$ if i and j form a matched pair, $X_{ij} = 0$ otherwise.”

30. Try $X = \sum_{i=1}^{20} X_i$, where $X_i = 1$ if there is a married couple at seats i and $i + 1$.