

Assignment 10
Due Wednesday 9/28

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

Chapter 6: P 27*, 28, 32*, 33, 39*, 42*, 44*

TE 4, 9*, 14

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

Hints and instructions:

P 28, 29; TE 9: As usual, start by getting the cumulative distribution function. For TE 9, it helps to think about

$$1 - F_{\min(X_1, \dots, X_n)}(y) = P(\min(X_1, \dots, X_n) > y).$$

What does it tell you about the values of X_1, \dots, X_n if their minimum is greater than y ?

P. 33, 34: By Proposition 3.2 the sum of two *independent* normal RV's is normal; since if Y is normal, $-Y$ is also (see pp. 206–207), and so $X - Y = X + (-Y)$ is normal. (in 32 you should assume that the sales for the two weeks are independent RV's. Note that these are *different* RV's even though they have the same distribution.)