STAT203 Homework #11

This is an optional assignment – intended only to increase student's grades and to prepare for the Final Exam

<u>Due</u>: Thursday, December 4th at 11.30am – no late papers will be accepted. <u>**Directions**</u>: Read Sections 4.5, 4.6, 4.10 and 4.11, the online Class Notes, and then solve the following exercises. Please write or type up your solutions <u>very neatly</u> and show all relevant work. \rightarrow Keep a copy of your solutions to these exercises to help you prepare for the Final Exam. \leftarrow

Page(s) in text	Exercise
p. 196	# 4.5-2. For part (b), clearly write down your conclusion in the
	context of this exercise.
p. 197	# 4.5-8. For part (a), clearly write down your conclusion in the
	context of this exercise. For part (b), clearly write down the
	justification for your answer to the posed question.
p. 207	# 4.6-2. For the given data, $n = 15$, $\Sigma x_k = 399$, $\Sigma y_k = 1,886$, $\Sigma x_k^2 = 1,886$
	10,781, $\Sigma y_k^2 = 249,992$, $\Sigma x_k y_k = 50,919$, SSResid = $\Sigma e_k^2 = 9,490.2$.
	Do part (a), but omit the text's part (b). Add the following:
	(b) predict y for x = 30, and clearly identify x and y in this case
	(i.e., what do x and y represent?);
	(c) find the values of r ² and (by taking the square root) r. Also,
	find r by using the formula given on p.87 and verify that the two
	values coincide – show all work;
	(d) find the 90% CI for the true slope parameter, clearly
	interpret this interval and give its ramifications (related to the
	value zero) – show all work.
p.246	# 4.10-4. Clearly write down the null and alternative in terms of
	parameters (define what the parameters are), and give your
	clear conclusion/interpretation.
	A person claims to have ESP, and takes a multiple-choice test of
	100 questions; each question has one correct and three incorrect
	answers. This test is written in a language that this person does
	not understand, yet gets 33 questions correct. Do you feel that
	this person has ESP? Clearly write down the hypotheses, p-
	value, and your detailed conclusion; show all work. Use $\alpha = 5\%$
p.258	# 4.11-8. Do only parts (b) and (d). For (b), clearly write down
	the hypotheses, and your detailed conclusion. Show all work,
	and again use $\alpha = 5\%$.