

Notes about the sample problems:

With the couple exceptions noted below, we have covered all of this material in class. On the other hand, Professor Simon and I do differ a bit in style and emphasis, as will be immediately evident. Some specific notes about his solutions to these problems:

- A2: You should ignore parts h, i, and j.
- A7. c. The degrees of freedom is  $n-1$  for t tests
  - h. Note here and many places below, Gary uses “accept” the null hypothesis where as I emphasized in class, we would say “do not reject” the null hypothesis. Qualitatively these say the same thing. Gary is less compulsive than I about the terminology.
- A10 d. This relates to the problem of multicollinearity. 0.67 is not all that high.
- B1. h. We did not cover this in class. One would never do this in practice.
  - j. This is what  $R^2$  is for.
- B5 d. This is only possible because  $s_y$  uses  $N-1$  in the denominator and  $s_e$  uses  $N-2$ . If they both used  $N-1$ , or  $N$ , then  $s_y$  would have to be bigger than  $s_e$ .
  - k. This relates to the part of the notes (23) that we skipped over today (12/4)
  - h. I would say this would be an unfair question for an exam.
- B8. I suggested you not use the pooled variance. We skipped over this in class today (12/4). Using the approach I suggested in class, the standard error for the differences in the means would be  $\sqrt{40^2/24 + 30^2/30} = 9.831$ , and the confidence interval would be  $(210-250) \pm 1.96(9.831) = -59.268$  to  $-20.731$ , as opposed to the answer in the answer key, which is  $-59.11$  to  $-20.89$ , not a large enough difference to argue about.
- C6 h. See the omitted part of the class notes for today (12/4, notes 23)
  - i. Assuming normality doesn't make it true. One might want to think about the data and decide if the normality assumption is reasonable.
- D5. We did not discuss “sample size” problems, though there are a few examples/application in your notes for the early part of the course.
- E2. When we examined the random walk model, we skipped over the lognormal random walk model – this appears at the end of the notes for that day.