Christopher Meng STAT021-Section 1 Exam 1 Test Corrections version 1

(1) The two correct answers are (a) and (c). A CI is parallel to a hypothesis test in the sense that if the parameter of interest isn't contained within the CI, that is equivalent to rejecting the null hypothesis (e.g. $p = \frac{316}{100000}$). Therefore, (a) is correct. (c) is the definition of the interpretation of a 90% CI; in repeated random samples, we would expect new CIs to contain the true parameter 90% of the time. (d) is incorrect because the data is already given; there is no uncertainty or randomness involved. While we don't know the parameter for this area, we know that it's either included or not included in the CI with 0% or 100% probability/chance.

(5) The two correct answers are (c) and (d). (c) wants a CI, and (d) wants to test statistical significance. Both are inferential procedures. (b) is not an inferential procedure because the person is not using the model to predict a new observation. Their house is contained within the sample of local houses that the SLR model is fitted to. The model is describing the relationship list price and final sale price in that neighborhood/area. The prediction is not for a new observation from the population but another house within the sample. *

*This was my first thought, which I don't believe is correct or at least the best reasoning. I'll leave it there instead of erasing. What I want to say about (b) is that, despite the word "predict," there is no inference involved. We can always use the model for an observation, especially if it's from the same sample. However, we're not trying to say something about how accurate the estimate is (i.e. create an interval); we're simply describing what value is spit out when you plug in $189k.