**STAT 200 QUIZ 3 Extended Due Date: Wednesday, July 6, 2016**

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**INSTRUCTIONS**

* There are three problems in this quiz. Each problem is worth about 33 points, comprising a total of 100 points for the quiz, equivalent to 16% (or 80/500) of your final course grade (like Quiz 2). This quiz is ***open book*** and ***open notes***. This means that you may refer to your textbook, notes, and online classroom materials,). You may take as much time as you wish, provided you turn in your quiz no later than **11:59 PM (US Eastern Time Zone)** **Wednesday, July 6, 2016**.
* **Show work/explanation. Answers without any work may earn little, if any, credit.** You may type or write your work in your copy of the quiz, or if you prefer, create a document containing your work. Scanned work is acceptable also; **a single file in pdf format is preferred.** **In your document, be sure to include your name and the assertion of independence of work.**
* If you have any question, please post it in “Ask the Professor” discussion on LEO if the answer to your question would benefit others in class; otherwise, please contact me privately via e-mail.

**PLEASE READ THE QUESTIONS/PROBLEMS CAREFULLY; SHOW ALL YOUR WORK AND REASONING, *Just the answer, without supporting work, will receive no credit.***

1. (Show your work.) A Nissan Motor Corporation advertisement read: “The average man’s I.Q. is 107. The average brown trout’s I.Q. is 4. So why can’t man catch brown trout?” Suppose you believe that the brown trout’s mean I.Q. is greater than four. You catch 12 brown trout. A fish psychologist determines the I.Q.s as follows: 5; 4; 7; 3; 6; 4; 5; 3; 6; 3; 8; 5. Conduct a hypothesis test of your belief. Use a significant level of 5%. The standard deviation of the I.Q.s listed is approximately 1.62. You can use the **statistical tables provided on LEO (Content > Course Resources > Statistical Resources).**
2. (Show your work.) According to the Center for Disease Control website, in 2011 at least 18% of high school students have smoked a cigarette. An Introduction to Statistics class in Davies County, KY conducted a hypothesis test at the local high school (a medium sized–approximately 1,200 students–small city demographic) to determine if the local high school’s percentage was lower. One hundred fifty students were chosen at random and surveyed. Of the 150 students surveyed, 82 have smoked. Use a significance level of 0.05 and using appropriate statistical evidence, **conduct a hypothesis test and state the conclusions.** You can use the **statistical tables provided on LEO (Content > Course Resources > Statistical Resources).**
3. (Show your work.) A study is done to determine if students in the California state university system take longer to graduate, on average, than students enrolled in private universities. One hundred students from both the California state university system and private universities are surveyed; suppose that from years of research, it is known that the population standard deviations are 1.5811 years and 1 year, respectively. The following data are collected. The California state university system students took on average 4.5 years with a standard deviation of 0.8. The private university students took on average 4.1 years with a standard deviation of 0.3. **What would be your conclusions based on significance levels of 5% and 1%?** You can use the **statistical tables provided on LEO (Content > Course Resources > Statistical Resources).**