Prince Sultan University

STAT 271
First Examination
First Semester 2013/2014, Term 131
Thursday, 3rd October 2013
Dr. Bahaa El-din Abdalla

Time Allowed: 45 minutes

Maximum points: 20 points

Name: _____ _____ _____ ID Number: _____

(First) (Middle) (Last)

Important Instructions:

1. You may use CASIO scientific calculator that does not have programming or graphing capabilities.
2. Don't use notes or any notebook.
3. There should be NO talking during the examination.
4. You must show all your work beside the problem. Be organized.
5. You may use the back of the pages for extra space, but be sure to indicate that on the page with the problem.
6. This examination has 4 problems, some with several parts. Make sure that your paper has all these problems.

Problem	Max points	Student's Points
1,2	10	
3,4	10	
Total	**20**	

Q1 (6 points) Determine the *P*-value in each case.

1. $t = -2.05$, $n = 60$, left-tailed

2. $z = 2.273$, two-tailed

3. $t = 0.231$, $n = 29$, two-tailed

Q2 (4 points) It is believed that 25% of U.S. homes have a direct satellite television receiver. Find the minimum sample size necessary to estimate the true proportion of homes with 92% confidence and within 3% of the true proportion.

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Q3 (6 points) Many people sleep late on the weekends to make up for "short nights" during the workweek. The Better Sleep Council reports that 61% of us get more than 7 hours of sleep per night on the weekend. A random sample of 350 adults found that 224 had more than 7 hours of sleep each night last weekend. At the 0.01 level of significance, does this evidence show that more than 61% sleep 7 hours or more per night on the weekend?

Q4 (4 points) The average weight of 40 randomly selected minivans was 4150 pounds. The standard deviation was 480 pounds. Find the 99% confidence interval of the true mean weight of the minivans.