Prince Sultan University
STAT 271
Second Examination
First Semester 2012-2013, Term 121
Wednesday, November 28rd, 2012
Dr. Khaled Manasrah

Time Allowed: 90 minutes
Maximum points: 40 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. You may NOT borrow a calculator from anyone.
3. You do NOT get special consideration if you forget your calculator.
4. Don't use notes or any notebook.
5. There should be NO talking during the examination.
6. Your exam will be taken immediately without any warning if your mobile is seen or heard.
7. Work in a neat and well-organized manner. Show your work on all problems. Please indicate your final answers clearly.
8. You may use the back of the pages for extra space, but be sure to indicate that on the page with the problem.
9. This examination has **7** problems, some with several parts. Make sure that your paper has all these problems.

Problem	Max Points	Points Earned
1	4	
2	4	
3	4	
4	4	
5	11	
6	3	
7	10	
Total	40	

1) (4pts) Lionel Messi : In November 14, 2012 score game between Saudi Arabia and Argentina, 83% of Saudi households had watched the game. Mohammad, a STAT 271 student, sampled 55 households and found that 49 had watched the game. At the .05 level of significant, has the percentage changed. Use P-value method.

2) (4pts) Al jazeera net claims that the variance of the number of deaths annually from car accidents in the Saudi Arabia is less than 1225. If a sample of 11 randomly selected years had a variance of 1024, is the claim believable? Use $\alpha = .05$

3) (4pts) A survey of 1000 Students nationwide showed a mean SAT score of 21.4. A survey of 500 Riyadh scores showed a mean of 20.8. If the population standard deviation in each case is 3, construct the 99% confidence interval for the mean difference between the two groups.

4) (4pts) In a sample of 80 men, 55% wished that they were rich. In a sample of 90 women, 45% wished they were rich. At $\alpha = 0.01$, is there a difference in the proportions of men and women.

5) (11pts) The mean of the salaries of a sample of 26 elementary school teachers is $48,256, and the sample standard deviation is $3,912.4. The mean of the salaries of a sample of 24 secondary school teachers is $45,633 with standard deviation $5,533.

a) Find the 95% confidence interval for the difference of the means.

b) Explain what the phrase 95% confidence interval means.

c) Use $\alpha = 0.1$, test the claim that the variance of the salaries of the elementary school teachers is different from the variance of the salaries of the secondary school teachers.

6) (3pts) A study reports a correlation of $r = -0.883$ between family income in riyals and the number of kilograms of soft margarine the family consumes in a year. You conclude that (**circle the correct answer**)

This is nonsense- you can't compute a correlation between income and amount of margarine
Something is wrong- a correlation can't take the value -0.883
Higher income families consume less soft margarine than lower income families
Higher income families consume more soft margarine than do lower income families.

7) (10pts) The following record represent the outside temperature and the number of emergency calls an emergency service receives for a 7-hour period

Temperature	68	74	82	88	93	99	101
No. of calls	7	4	8	10	11	9	13

a) Find the equation of the regression line of No. of calls y on Temperature x.

b) Find the predict number of calls if the temperature is 120.

c) Is there sufficient evidence at $\alpha = 0.05$ to conclude a significant relationship between the two variables?