First Name: _____

Last Name: _____

ID Number: _____

Prince Sultan University
STAT 271
Second Examination
Second Semester 2013/2014, Term 132
Wednesday, 9th April 2014
Dr. Mohammed Kaouache

Question	Max points	Student's Points
1	15	
2	15	
3	15	
Total	45	

Time Allowed: 90 minutes

Q1- 15 points. A tax collector wishes to see if the mean values of the tax-exempt properties are different for two cities. The values of the tax-exempt properties for the two samples are shown. The data are given in millions of dollars.

City A	City B
22	11
25	296
30	250
11	12
19	12
7	68
31	81
19	16
	4
	5

Assume that both populations are normally distributed and the population variances are not equal.

1) Follow the steps below to find out if there is enough evidence to support the claim that the means are different?

a-2 points) State the null and the alternative hypotheses

b-1 point) Define the test statistic

c-1 point) Find the test value

d-2 points) Find the p-value

e-1 point) Would you reject the null hypothesis at the level $\alpha = 0.05$, explain why.

f-1 point) Draw your conclusion

2) a-3 points) Construct an appropriate 95% CI on the difference in mean weights between the two types.

b-2 points) Use this interval to answer the question posed in 1)

c-2 points) Give a practical interpretation of this interval

Q2-15 points) At a recent PGA tournament (the Honda Classic at Palm Beach Gardens, Florida)
the following scores were posted for eight randomly selected golfers for two consecutive days.

Golfer	1	2	3	4	5	6	7	8
Thursday	67	65	68	68	68	70	69	70
Friday	68	70	69	71	72	69	70	70

1)
Follow the steps below to test the claim that the mean scores for the two days are different?

a-2 points) State the null and the alternative hypotheses

b-1 point) Define the test statistic

c-1 point) Find the test value

d-2 points) Find the p-value

e-1 point) Would you reject the null hypothesis at the level $\alpha = 0.05$, explain why.

f-1 point) Draw your conclusion

2) a-3 points) Construct an appropriate 95% CI on the difference in mean weights between the two types.

b-2 points) Use this interval to answer the question posed in 1)

c-2 points) Give a practical interpretation of this interval

Q3- 15 points)

In a sample of 200 men, 130 said they used seat belts. In a sample of 300 women, 150 said they used seat belts.
Follow the steps below to test the claim that the proportion of men using seat belts is different from the proportion of women using seat belts.
1)

a-2 points) State the null and the alternative hypotheses

b-1 point) Define the test statistic

c-1 point) Find the test value

d-3 points) Find the p-value

e-1 point) Would you reject the null hypothesis at the level $\alpha = 0.05$, explain why.

f-2 point) Draw your conclusion

2) **a- 3 point)** Construct a 95% traditional CI on the difference in the two proprotions

b-1 point) Use this interval to answer question 1)

c-1point) Give a practical interpretation of the interval