King Fahd University of Petroleum & Minerals
Department of Mathematics & Statistics
STAT-211-Term171
Quiz #5

Name: ID: Serial:

Q1:
The owner of restaurant A wants to study the characteristics of his customers. He decides to focus on two variables:

- The amount of money spent by customers
- Whether the customer's order dessert.

The results from a sample of 62 customers are as follows:

- Amount spent: the mean = $40.11 and the standard deviation = $ 7.41
- 20 customers purchased dessert

a. Construct and interpret a 90% confidence interval estimate of the population proportion of customers who purchase dessert.

b. Do you need any assumptions? If yes, what? If no, why?

The owner of a competing restaurant B wants to conduct a similar survey in his restaurant.

c. Based on his competitors information he tries to find the sample size he needs to have 95% confidence to estimate the population mean amount spent in his restaurant to within ±$2.7. What is the sample size?

He decides to sample the number he found above, and the results are

- Amount spent: the mean = $35.32 and the standard deviation = $ 15.65
- 25 customers purchased dessert

d. Construct a 99% confidence interval for the difference in the mean spent in both restaurants. Based on this confidence interval, what conclusion can you draw about the mean amount spent in restaurant **B** compared to the mean amount spent in restaurant **A**?