**STAT 101 SPRING 2020 MID-TERM LAB Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**This lab is comprised of six applications.**

**LAB#1**

**2.20.20 : : DUE 2.27.20**

**(Sections may be submitted early)**

**Grading:** Item values are noted in [ ], with the general deductions at .5. **Applications I – III** are to be completed on this sheet.

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**APPLICATION I: Frequency Table Components [3]**

A quantitative data set has been placed into a grouped-data table using equal width classes of width = 6.

**A)** [1] If the midpoint of the second class is 29.5, what are its lower and upper boundaries? \_\_\_\_\_ and \_\_\_\_\_

**B)** [1] What are the lower and upper class limits of the fourth class? \_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_

**C)** [1] Into which class would an observation of 32.5 go? 1st 2nd 3rd 4th 5th

**APPLCATION II: Satisfaction with Family Life [4]**

The general Social Survey asked respondents about their amount of satisfaction with family life. Here, 1002 respondents reported their satisfaction levels with family life, including: Very Great Deal – 415; Great Deal – 329; Quite a Bit – 99; A Fair Amount – 90; Some – 27; A Little – 25; None – 17.

**Data Analysis:**

1. Identify the variable for which data are being collected [.5]: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. Identify the characteristics of the variable [.5; all or nothing]:

Qualitative vs. Quantitative Discrete vs. Continuous vs. N/A Scale of measurement: N O I R

1. What is the sample size, n [.5]? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. Determine the mean, median, and mode for the listed variable [1.5].

**MEAN = \_\_\_\_\_\_\_\_\_\_ MEDIAN = \_\_\_\_\_\_\_\_\_\_ MODE: \_\_\_\_\_\_\_\_\_**

1. Examine the mean, median and mode [1].

Which of these measures of center would you NOT use as a measure of the center for these data?

1. Mean B) Median C) Mode

Why? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**APPLICATION III: Global Climate Change [6]**

**LAB#1**

**2.20.20 : : DUE 2.27.20**

**(Sections may be submitted early)**

The Pew Center on Global Climate Change reports that possible global warming is largely a result of human activity that produces carbon dioxide emissions and other greenhouse gases. The CO2 emissions from fossil fuel combustion are the result of the generation of electricity, heating, industrial processes, and gas consumption in automobiles. The *Human Development Report 2003*, published by the United Nations Development Programme, reported the per capita make up more than half the world population. The values are presented in metric tons per person:

China 2.3 India 1.1 United States 19.7 Indonesia 1.2

Brazil 1.8 Russia 9.8 Pakistan 0.7 Bangladesh 0.2

1. Determine the mean, median and mode for CO2 emissions for these eight countries. Show the formula and calculations, as needed [3].

MEAN: \_\_\_\_\_\_\_\_ MEDIAN: \_\_\_\_\_\_\_\_\_ MODE: \_\_\_\_\_\_\_\_\_\_

1. Draw a Dot Plot of these data and indicate on the dot plot the location of both the mean and the median [2].
2. Given the CO2 emissions values, is there any value that might be considered an outlier (an unusual value that one might want to check)? [1]

NO YES If YES, which value: \_\_\_\_\_\_\_\_\_\_

If you feel that there is an outlier, discuss its impact on the median and the mean.

Impact on median: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Impact on mean: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**APPLICATION IV [7]: Mountains**

**LAB#1**

**2.20.20 : : DUE 2.27.20**

**(Sections may be submitted early)**

**Assignment: ON THIS SHEET**, complete the following problem using the data set to which you have been assigned. The problem completed on other/additional sheets or the substitution of other sheets (e.g. notebook page) will not be accepted. Your problem solution will not be accepted after the date listed to the right.

**Data assignment:** See the listing below for the data set to which you have been assigned.



**BD21298_Rounding of class widths:** When determining the class width round to the nearest working multiple of 5 that would meet the table specifications (e.g. round a calculated width of 18.4 to 20, or 25, or 30, etc., such that all data are included in the table).



**BD21298_**

**ADK High Peaks:**

**1)** [4]Create a quantitative, grouped frequency table having the lower class limit of the first class at 3800 ft. and consisting of 6 classes. See the above note regarding rounding of class widths.

**2)** [2] Create a graph/chart appropriate for the presentation of the frequency table data.

**3)** [1] Provide a descriptive paragraph summarizing information presented in your frequency table and chart.

**BD21298_**

**CATSKILL 3500:**

**1)** [4]Create a quantitative, grouped frequency table having the lower class limit of the first class at 3500 ft. and consisting of 6 classes See the above note regarding rounding of class widths.

**2)** [2] Create a graph/chart appropriate for the presentation of the frequency table data.

**3)** [1] Provide a descriptive paragraph summarizing information presented in your frequency table and chart.

**BD21298_**

**FIRE TOWERS:**

**1)** [4] Create a quantitative, grouped frequency table having the lower class limit of the first class at 1700 ft. and consisting of 6 classes. See the above note regarding rounding of class widths.

**2)** [2] Create a graph/chart appropriate for the presentation of the frequency table data.

**3)** [1] Provide a descriptive paragraph summarizing information presented in your frequency table and chart.

**MID-TERM LAB, APPLICATION IV NAME: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**PLACE THE FREQUENCY TABLE HERE PLACE SELECTED GRAPH/CHART HERE**

**AREA FOR CALCULATIONS AS NEEDED.**

**SUMMARY:**

**STAT 101 SPRING 2020 MID-TERM LAB**

**LAB#1**

**2.20.20 : : DUE 2.27.20**

**(Sections may be submitted early)**

**APPLICATION V: SPSS Analysis of Random Acts of Kindness (RAK) [8]**

This application requires you to obtain statistical tables and write a brief report.

**RAK Questions:** During an earlier class I asked you to respond to three questions. Each results in your doing an act on behalf of someone else – without the expectation of something in return. Do these acts differ in response pattermns? Why might differences occur?

**Questions asked:**

**1)** If you could, would you tell a person what time it was if you were asked? **1)** Yes **2)** No

**2)** A woman just in front of you stumbles and drops her groceries. What would you do?

**1)** Stop and help pick up the items. **2)** Ignore her and keep moving.

**3)** A stranger walks up to you and asks to borrow your cell phone so that she can notify a friend where to meet her. Would you loan the phone? **1)** Yes **2)** No

**Statistical Data:** Your responses along with data from prior classes are maintained in the SPSS file titled: **RAK.sav**.

**SPSS Output needed:** Make frequency tables of the three variables **TIME, GROCERIES, and PHONE.** Additionally make a contingency table (in SPSS it’s a Crosstabs) of the variables **PHONE by SEX.** Place all four tables into your paper as noted below.

**SPSS: How to obtain a Contingency Table:** Analyze > Descriptive Statistics > Crosstabs > objective variable goes into Rows > explanatory variable goes into Columns > select the “Cells” button > select the Row %, Col %, and Total % [all along left side of the dialog box] > Continue > OK.

**Paper Format:**

* Your document is limited to **ONE sheet of paper** (two-sides), containing the sections outlined below.
* Please **do not use text boxes** for your discussion.
* Please separate sections of your paper by using the “side-headings” presented in **bold print** below.
* **Paper Header:**

**SPRING 2020 MID-TERM APPICATION LAB PART V: RAK Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Paper Sections** (use as paper section headings)**:**

**Introduction [2]:**

Here identify the objective of the analysis. What is it that we are looking for (see RAK discussion) and what types of statistical analysis that will be presented (see below)?

**Random Acts Comparison [2]:**

Place the three frequency table here in the following order: Time, Groceries, and Phone. Review the frequency and relative frequency data contained in the tables. Discuss any similarities/differences/trends you observe across the three variables.

**Loaning a Phone [2]:**

Place the contingency table here. Review the table and discuss any differences/similarities presented between the sexes. What have you learned by building a contingency table for the phone variable? Why might differences occur?

**Summary [2]:**

Briefly restate the objective followed by a summary of key points from each of the previous two sections. As a concluding statement, if you notice differences across the three variables, suggest why they may have occurred.

**STAT 101 SPRING 2020 MID-TERM LAB**

**LAB#1**

**2.20.20 : : DUE 2.27.20**

**(Sections may be submitted early)**

This application requires you to obtain statistical tables and write a brief report.

**APPLICATION VI: HEALTH SURVEY [12]**

Earlier this semester class members completed a general health survey originally found in the ***Parade***, section of weekend newspapers (1.9.2011). The results of this data collection, combined with earlier data collections are contained in a SPSS data file. Your task is to create a paper that examines three questions asked in the survey. The first item pertains to “SENIOR MOMENTS.” The second item examines HEAT LOSS and the third variable is your choice.

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**NOTE:** In the Class Assignments section online there is a PowerPoint listed with this assignment that contains the “correct” answers to the survey questions. Incorporating a comparison of these answers to the data collected.

**Statistical Data File: HEALTH\_SURVEY.sav**

**SPSS Output needed:** The tables and charts for each variable are noted in the sections below**.**

**SPSS: How to obtain a Contingency Table:** Analyze > Descriptive Statistics > Crosstabs > objective variable goes into Rows > explanatory variable goes into Columns > select the “Cells” button > select the Row %, Col %, and Total % [all along left side of the dialog box] > Continue > OK.

**Paper Format:**

* Your document is limited to **ONE sheet of paper** (two-sides), containing the sections outlined below.
* Please **do not use text boxes** for your discussion.
* Please separate sections of your paper by using the “side-headings” presented in **bold print** below.
* **Paper Header:**

**SPRING 2020 MID-TERM APPICATION LAB PART VI: HEALTH SURVEY Name: \_\_\_\_\_\_\_\_**

**Paper Sections** (use as paper section headings)**:**

**Introduction [2]:**

Here discuss the source of your data, the variables to be studied and what tables/charts will be used to address each variable.

**Senior Moments [2]:**

**BD21298_**Obtain an appropriate chart for the presentation of the variable SENIOR MOMENTS. Place the chart here. Provide a brief discussion of the results obtained for this variable. [Refer to the section above.]

**Heat Loss [4]:**

**BD21298_**Obtain a contingency table of the variable HEAT LOSS by SEX and enter it into the paper here. Discuss: 1) the overall findings for this variable (use right totals, which reflect the values in a frequency table; and 2) analyze the differences/similarities between the sexes by using the contingency table. [Refer to the section above.]

**Third Variable [2] (change this header to reflect the variable you select):**

**BD21298_**Obtain a frequency table and a chart appropriate for the presentation of the selected variable. Place the table and chart here. Provide a brief discussion of the results obtained for this variable. [Refer to the section above.]

**Summary [2]:**

Briefly restate the paper’s objective followed by a summary of key points from each of the previous three sections. Provide a concluding statement about some aspect of your study.