

CS130 Assignment #4

Date assigned: 1/20/11
Date due: 1/21/11 by 4pm
Points: 50

Create a Word document **PUNuetIDAnswers.doc** using your PUNetID that will contain answers to each of the following questions in order when applicable. Your answer document and any other files created are to be placed in a folder called **PUNetIDSolution4** once again using your PUNetID.

In the Word document described above, answer each of the following questions in order under the heading specified. That is, list the heading in bold and then give your answer.

Problem #1

Assume that in major league baseball the league batting average is .2217 with a standard deviation of .0299. A random group of pitcher and infielder batting averages are:

Pitcher Batting Averages	Infielder Batting Averages
.127 .150 .132 .169	.242 .325 .271 .277
.111 .138 .119 .131	.288 .244 .267 .288
.153 .162 .181 .215	.260 .262 .252 .294
.174 .215 .143 .167	.269 .256 .273 .291
.145 .165 .156 .168	.257 .291 .251 .256

Create a PASW dataset with the above data. Call the dataset **baseball.sav** and then answer each of the following questions in your word document.

Problem 1 - Question 1

What is the Mean, Median, Standard Deviation, Minimum and Maximum values for the Pitcher Batting Averages and for the Infielder Batting Averages.

Pitchers are known to be bad hitters. Given the above data, are pitchers batting averages significantly different than the league batting averages?

Problem 1 - Question 2

What hypothesis test will you use to answer the previous question? Why are you using this test?

Problem 1 - Question 3

What is the population for this problem? Briefly explain your answer.

Problem 1 - Question 4

What is the sample for this problem? Briefly explain your answer.

Problem 1 - Question 5

What is the Null Hypothesis?

Problem 1 - Question 6

Perform the correct hypothesis test and paste your results from PASW here.

Problem 1 - Question 7

Should we accept or reject the Null Hypothesis? Why?

Problem 1 - Question 8

State your conclusion.

Problem 1 - Question 9

Explain exactly what the Sig. (2-tailed) value means in this case. I don't want just if the value is less than 0.05 reject the null hypothesis or greater than 0.05 accept the null hypothesis, but in terms of the problem explain the meaning of the Sig. (2-tailed) value including the concept of chance occurrences. Someone without a statistics background must be able to understand your explanation.

Problem #2

Consider the calories burned by women and men over a 24-hour period of time. Using PASW, you are to create a dataset called **calories.sav** with the data below.

Subject	Sex	Rate
1	M	1788
2	M	1676
3	F	994
4	F	1431
5	M	1400
6	F	1413
7	M	1358
8	F	1503
9	M	1260
10	M	1615
11	F	1190
12	F	915
13	M	1461
14	F	1125
15	M	1060
16	F	1350
17	F	1210
18	M	1870

You are to find if the calories burned by women is significantly different than the calories burned by men.

Problem 2 – Question 1

What hypothesis test will you need to perform to find this result? Fully explain why you selected the test you did.

Problem 2 – Question 2

State the NULL Hypothesis for the statistical test you selected.

Problem 2 – Question 3

Paste in the results of the statistical test.

Problem 2 – Question 4

State your conclusion.

Problem 2 – Question 5

Explain exactly what the Sig. (2-tailed) value means in this case. I don't want just if the value is less than 0.05 reject the null hypothesis or greater than 0.05 accept the null hypothesis, but in terms of the problem explain the meaning of the Sig. (2-tailed) value including the concept of chance occurrences. Someone without a statistics background must be able to understand your explanation.

Problem2 – Question 6

What are the correct type and measure of each of the variables in this dataset? Explain why each variable is the type and measure you selected.

Submitting your work:

To submit your work, copy your single folder **PUNetIDAssign4** containing (**PUNuetIDAnswers.doc**, **baseball.sav**, and **calories.sav**) into the **CS130 Drop** folder on Turing. You must submit your work by the time specified above for your assignment to be considered on time.

Grading:

Grading will be based on:

- 1) Correctness of your results
- 2) Completeness of your results
- 3) Professional look and correctness of your Word document answers.