**BIOS 543 GRADUATE RESEARCH METHODS I**

**Homework # 3 Grade Sheet**

|  |  |  |
| --- | --- | --- |
| Question |  |  |
| Question 1: Say we have the following research question: is mean CD34 different between ATG and No ATG groups? | Total Points | Points Earned |
| Main Idea | 5 | 5 |
| 1a. Translate this research question into a set of testable hypotheses in symbolic form.  Symbols used  Null Hypothesis Expressed in Symbolic Form  Null Hypothesis:  Alternative Hypothesis Expressed in Symbolic Form  Alt. Hypothesis: | 1  1  1  1  1 |  |
| Total | 10 |  |
|  |  |  |
| Question 2: Assess the assumptions needed to compare these groups. | Total Points | Points Earned |
| Main Idea: | 10 | 10 |
| 2a. Visualize the distribution of CD34 in each group.  Code-based calculation in R  Visualization reported (Hist, QQ-Plot, Box Plot)  Visualization reported for each group | 1  1  1 |  |
| 2b. Assess the equality of variance across groups.  Visual Assessment or Code-based calculation in R | 1 |  |
| 2c. Comment on whether the assumptions are satisfied.  Statement of whether normality assumption is satisfied  Statement of whether equal-variance assumption is satisfied | 1  1 |  |
| 2d. Based on your assessment, state unequivocally which test you are conducting.  One statistical method stated | 1 |  |
| 2e. State which functions in R/RStudio you’re using for each task.  Function stated for normality and equal variance (if necessary)  Function stated for summarization  Function stated for Hypothesis Test | 1  1  1 |  |
| Total | 20 |  |
|  |  |  |
| Question 3: Summarize the CD34 measurement for each Group. | Total Points | Points Earned |
| Main Idea | 5 | 5 |
| 3. Create a table of sample sizes, measures of center, measures of variability, and confidence intervals (if appropriate).  Code-Based tabulation of summaries in R  Table provided in write-up  Summaries provided for each group  Correct Summaries Provided   |  |  |  |  |  | | --- | --- | --- | --- | --- | | If Normality Assumed | | | | | | Group | Sample Size | Mean | Sd | 95% CI | | ATG |  |  |  |  | | No ATG |  |  |  |  | |  | | | | | | If Normality NOT Assumed | | | | | | Group | Sample Size | Median | Min | Max | | ATG |  |  |  |  | | No ATG |  |  |  |  |   Summaries match decision on normality from Question 2c | 1  1  1  1  1 |  |
| Total | 10 |  |
|  |  |  |
| Question 4: Compare the groups with a hypothesis test. | Total Points | Points Earned |
| Main Idea | 12 | 12 |
| 4a. If appropriate, report the difference and its 95% confidence interval  Difference and 95% CI reported or Not Appropriate | 1 |  |
| 4b. Report the relevant statistics from performing that hypothesis test.  Code-Based performance of test in R  Inferential statistics provided  Correct inferential Statistics Provided | 1  1  1 |  |
| 4c. State your conclusion from these findings.  Decision (including reject or fail to reject) stated  Correct Decision:  Contextual conclusion provided  Contextual Conclusion: | 1  1  1  1 |  |
| Total | 20 |  |
|  |  |  |
| Question 5: Test whether survival is equal between ATG and No ATG Groups. | Total Points | Points Earned |
| 5a. Report the difference and its 95% confidence interval | +1 |  |
| 5b. Report the relevant statistics from performing that hypothesis test. | +1 |  |
| 5c. State your conclusion from these findings.  Correct Decision  Contextual Conclusion | +1  +1 |  |
|  |  |  |
| Total for HW # 3 | 60 |  |

Grader: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Student: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_