**Homework 8**

**Single-Sample *T-*Test**

**When submitting this file, be sure the filename includes your full name, course and section. Example: HW8\_JohnDoe\_354B01**

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|  | **Part I: Concepts**  **Questions 1–3**  **These questions are based on the Nolan and Heinzen reading and end-of-chapter questions.** |  |

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|  | **Part I: Questions 1a-1g**  **Fill in the highlighted blanks with the best word or words.** | |
| **1-a)** | You use a *t-*test when you know the population **\_ \_** but not the population **\_ \_\_**. |
| **1-b)** | The *t-*statistic indicates the distance of a sample mean from the **\_**  in terms of estimated standard error units. |
| **1-c)** | The 2 groups compared in the single-sample *t-*test are the sample and the **\_ \_**. |
| **1-d)** | The number of scores that are free to vary when you are estimating a population parameter from a sample is called the **\_ \_**. |
| **1-e)** | A researcher reports the results of a single-sample *t-*test as *t*(58) = 2.50. The degrees of freedom for this *t*-test are \_\_\_\_\_\_, which means there were **\_\_\_\_** total participants in the researcher's sample. |
| **1-f)** | Based on the t tables, the critical values of the *t-*statistic for a two-tailed test with *df* = 9 and a *p* level of 0.05 are  **\_**. |
| **1-g)** | When your *t-*statistic in your results exceeds your critical cutoffs, you **\_ \_\_** the null hypothesis. |

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|  | **Part I: Question 2-3**  **End-of-chapter problems:**  Complete the following exercises. If applicable, remember to show work in your homework document to receive partial credit. | | | | |
| **2)** | **Explain what each part of the following statistical phrase represents, as it would be reported in APA format: t(6) = 1.98, p = .047** | | | |
| ***t*** | | **Answer** | | |
| **6** | | **Answer** | | |
| **1.98** | | **Answer** | | |
| ***p*** | | **Answer** | | |
| **.047** | | **Answer** | | |
| **3)** | **Calculate the critical degrees of freedom and identify the critical t value for a single-sample t test in each of the following situations:** | | | |
| **3-a) Two-tailed test, N = 10, p = .10** | | | **df= Answer** | **critical *t* = Answer** |
| **3-b) Two-tailed test, N = 47, p = .05** | | | **df= Answer** | **critical *t* = Answer** |
| **3-c) One-tailed test, N = 80, p = .01** | | | **df= Answer** | **critical *t* = Answer** |

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|  | **Part II: SPSS Analysis**  **Module/Week 8 Exercise File 1**  **Open the “Module/Week 8 Exercise File 1” document (found in the course’s Assignment Instructions folder) in order to complete these exercises.** |  |

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|  | **Part II:  Exercises 1-3**  Use file: Module/Week 8 Exercise File 1  End-of-chapter exercise 9.37 in Nolan and Heinzen text   * **End-of-chapter exercise 9.37 in Nolan and Heinzen describes a study of anger and mood in a sample of 60 Marines following a month-long intense training exercise.** * **The anger scores for 6 fictional Marines are entered in the Module/Week 8 Exercise File 1 document (found in the Assignment Instructions folder).** * **Using these data, run 3 single-sample t-tests to compare the Marines’ mean anger score to the following population values:**  |  | | --- | | **Population mean anger scores** | | **Population of college men:  = 8.9**  **Population of adult men:  = 9.2**  **Population of male psychiatric outpatients:  = 13.5** |  * **For each test, paste the output and write a Results section in current APA style**    + As demonstrated in the presentation and in the textbooks. * **There will be 3 sets of output and 3 results sections using this data set**   + 1 for each test involving a different population mean. | |
| **1-a)** | **Population of college men:  = 8.9.** |
| **Output** | |
| **1-b)** | **Write a results section in current APA style describing the outcome.**  **All homework results sections must follow the example given in the SPSS presentation. Results sections are paragraphs and must include the APA-formatted statistical statement.** |
| **Answer** | |
| **2-a)** | **Population of adult men:  = 9.2** |
| **Output** | |
| **2-b)** | **Write a results section in current APA style describing the outcome. See (1b) for details.** |
| **Answer** | |
| **3-a)** | **Population of male psychiatric outpatients:  = 13.5** |
| **Output** | |
| **3-b)** | **Write a results section in current APA style describing the outcome. See (1b) for details.** |
| **Answer** | |

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|  | **Part III: SPSS Data Entry and Analysis**  **Data provided below.** |  |

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|  | |  | | --- | | **Attitudes Toward**  **Technology Scale Scores** | | 11  20  7  10  13  12  5  9  14  6  5  7  9  14  12 |   **Part III:  Questions 1-2**  Do elderly people have less positive attitudes toward technology than people in general?  A social psychologist assessed the attitudes of 15 elderly people using a scale where a lower score indicates a less positive attitude overall. The mean on this scale for the general population is 16.8. The data for the participants are shown in the table below.  **Using SPSS, conduct a single-sample *t*-test to answer the social psychologist’s research question.** | |
| **1-a)** | **Paste appropriate tabular output here** |
| **Output** | |
| **1-b)** | **Paste appropriate SPSS graph here** |
| **Graph** | |
|  | **2-a)** | **Write a results section in current APA style describing the outcome. Refer to earlier directions for details of what is expected.** |
| **Answer:** | |

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|  | **Part IV: Cumulative**  **Data provided below for respective questions.** |  |

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|  | **Part IV: Question 1a & 1b** (Non-SPSS)   * Age at onset of dementia was determined for a sample of adults between the ages of 60 and 75. * For a sample of 20 subjects, M = 69.8 and s = 2.79. * Use this information to answer the following: | | |
| **1-a)** | **Based on the data you have and the z table, what *percentage* of people might start to show signs of dementia at or before age 65?** | |
| **Answer** | | **Work:** |
| **1-b)** | **If you consider the normal range of onset in this population to be +/-1 z-score from the mean, what two ages correspond to this?** | |
| **Answer (+1 z)** | | **Work:** |
| **Answer (-1 z)** | | **Work:** |

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|  | **Part IV: Question 2a-2b** (Non-SPSS)  **For each of the following scenarios, compute the effect size and state whether it is approximately small, medium, or large.** | | | |
| **2-a)** | Participants in an inpatient study of treatment for OCD complete an anxious feelings inventory which is then compared to the general population.  The sample mean is M = 26.2.  The mean in the general population of inpatients on this inventory is 35.1, and the population standard deviation is 1.5. | | |
| **Effect Size:** | | **Answer** | **Work:** |
| **Small/Med/Large:** | | **Answer** |
| **2-b)** | A mood assessment in a sample of 15 gym members has a mean of 83 and a standard deviation of 5.6. The mean in the general population on this measure is 79.5. | | |
| **Effect Size:** | | **Answer** | **Work:** |
| **Small/Med/Large:** | | **Answer** |

Submit Homework 8 by 11:59 p.m. (ET) on **Friday** of Module/Week 8. Remember to name file appropriately.

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|  | **Done!** |  |