**Statistics in Criminal Justice**

**Homework 4**

**Each question is worth 2 points unless otherwise noted**

1. When do we use a z test? Give an original example that is relevant to criminology or criminal justice.

2. Calculate the z score using the following data that reflect the number of support meetings attended weekly by current and historic mental health court participants. Show your work (three points).

Data: Sample size is 50, sample mean is 12, sample standard deviation is 1.9

Population size is 295, population mean is 10, population standard deviation is 2

3. Is the z score you found for Question 2 significant at the .05 level? Why or why not (three points)?

4. Write your findings for Question 2 in standard reporting style

5. When do we use an independent samples t test? Give an original example that is relevant to criminology or criminal justice.

6. Using Chapter 11 Dataset 3, run an independent samples t test to determine whether there is a significant difference in the mean number of arrests for two types of sex offenders in the year after they participate in a CBT program.

Group 1 is sex offenders who offend against adults

Group 2 is sex offenders who offend against children

Copy and paste your output here (three points).

Questions 7-13 are based on the output you generated in Question 6.

7. What is the mean number of arrests for sex offenders who offended against adults?

8. What is the mean number of arrests for sex offenders who offended against children?

9. What is the t value?

10. What is the degrees of freedom?

11. Are the groups significantly different on the number of arrests in the year after CBT? How do you know (three points)?

12. Which group had more arrests after the year of CBT?

13. Write your results in standard reporting style.

14. When do we use a dependent samples t test? Give an original example that is relevant to criminology or criminal justice.

15. Using Chapter 12 dataset 2, run a dependent samples t test to determine whether there is a significant difference in self control after an intervention designed to raise self control, as compared to before.

The higher the score, the lower the level of self control

Copy and paste your output here (three points).

Questions 16-22 are based on the output you generated in Question 15.

16. What is the mean level of self control before the intervention?

17. What is the mean level of self control after the intervention?

18. What is the t value?

19. What is the degrees of freedom?

20. Was the group significantly different on self control after the intervention as opposed to before? How do you know (three points)?

21. When did the group have a higher level of self control?

22. Write your findings in standard reporting style.