**Dataset 3**

1 – Apply understanding

Q1. **Distinguish** between correlational and experimental designs.

A. Correlational designs look for relationships between factors but cannot determine cause and effect whereas experimental designs manipulate an independent variable in order to observe the effect on a dependent variable. OWTTE

Q2. **Calculate** the median score for Hours Slept. Show your working.

A. Med = 5, 5, 6, 6, 6, 6, 6, 6, 7, 7, 7, 7, 7, 7, 7, 7, 8, 8, 9, 9.

 Med = $\frac{7+7}{2}$

 Med = 7

Q3. **Determine** what type of variable Hours Slept is.

A. Continuous variable.

2 – Analyse evidence

Q1. Identify the **limitation** of correlational designs.

A. Correlational designs cannot determine causation. OWTTE

Q2. What is the **relationship** between the number of hours of sleep and not feeling rested in the morning?

A. The relationship is negative.

Q3. **Identify** the strength of the relationship based on Pearson’s Correlation coefficient.

A. The *r* value is greater than .5 which is a large effect and therefore considered a strong relationship. OWTTE.

3 – Interpret evidence

Q1. **Deduce** the strength of the correlation between the number of hours of sleep and not feeling rested in the morning.

A. The *r* value is -.54 indicating there is a strong negative correlation between the number of hours of sleep and not feeling rested in the morning. OWTTE

Q2. **Draw a conclusion** about the relationship between the number of hours of sleep and not feeling rested in the morning.

A. As the number of hours of sleep increases, not feeling rested in the morning decreases. OWTTE

Q3. **Draw a conclusion** about the significance of the results. **Justify** your answer.

A. The results are statistically significant. Results are accepted as significant when the P value is .05 or less. The P value for this study is .015 thus making it significant. OWTTE.

Q4. **Draw a conclusion** whether or not an increase in hours of sleep causes a decrease in not feeling rested in the morning.

A. We cannot determine whether or not increased hours of sleep causes not feeling rested in the morning to decrease as correlational designs cannot be used to determine causation. OWTTE