Questions

1. Explain the following concepts in your own words:

(a) What is the main limitation of the z test and what alternative exists that does not have that limitation? How does the shape of a t distribution change as the sample size increases?  Fully explain your answer.

(b) A social psychologist records the number of outbursts in a sample of different classrooms at a local school. Based on the statement below, what are the sample size, decision (retain or reject the null hypothesis), and effect size in this study?

The number of outbursts among students at this local school (M = 3) was significantly less than that in the general population, t(39) = 4.19, p < .05 (d = 0.25).

) A One-Sample t test was conducted to compare a mean depression score in a sample of 40 participants to a known mean score in the population. Examine the data below, calculate Cohen’s d, and write the findings in APA format:

2. Research Articles:  Choose one of the research scenarios below and respond to the prompt.

Hoekstra et al. (2012). Using Confidence Intervals for statistical inference. Hoekstra et al. (2012) contrasted hypothesis testing with the use of confidence intervals and explained, “When a CI is used only to determine whether the null value lies within the interval, the statistical inference is no different than determining whether the outcome of a t test is significant or not” (p. 1041). Explain what statistical inference can be made when the value of the null hypothesis “lies within the interval”.

A confidence interval is an interval in which a value of a sample estimator is believed to lie in at a given interval .for instance if a sample mean is believed to lie in a given interval at 95% confidence level it means that on repeating this experiment many times 95% or more sample means will lie in this interval on the other hand we can also say out of 100% possible samples of size n which can be drawn from our population 95% of sample means lie in our fixed interval 95% is a large sample enough to contain our population mean i.e with 95 samples the probability of having at least one representative sample is high