Hypothesis Testing Exercise

Question:

Below are details of weight Loss for Diet vs Exercise sample

Diet Only:

sample mean = 5.9 kg

sample standard deviation = 4.1 kg

sample size = n = 42

standard error = SEM1 = 4.1/ √42 = 0.633

Exercise Only:

sample mean = 4.1 kg

sample standard deviation = 3.7 kg

sample size = n = 47

standard error = SEM2 = 3.7/ √47 = 0.540

measure of variability = [(0.633)2 + (0.540)2] = 0.83

Did dieters lose more fat than the exercisers?

With the details above, perform the following tasks.

1. Determine if the null or alternative hypothesis would be accepted or rejected as the case may be
    a. **Null hypothesis**: No difference in average fat lost in population for two methods. Population mean difference is zero.
    b. **Alternative hypothesis**: There is a difference in average fat lost in population for two methods. Population mean difference is not zero.
2. Collect and summarize the data into a statistic i.e., find the “z” value
3. Determine the p-value
4. Make a decision regarding task 1.