Problem Set 8

JP

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# Context

You are trying out four different methods for helping participants with their depression. You decide to give out: medication only, individual therapy, group, and medication and individual therapy. Below are each level’s depression levels at the end of the experiment. You are interested in which therapeutic approach is significantly better at reducing depression levels compared to doing nothing for participants. For the following problem, please do all the following prompts and show your work.

data2 <- data.frame(meds = c(4, 5, 4, 6, 5),  
 ind\_therapy = c(5, 4, 3, 5, 5),  
 group = c(8, 8, 6, 9, 10),  
 med\_ind = c(3, 1, 3, 2, 1),  
 control = c(10, 9, 8, 7, 9))  
  
data2

## meds ind\_therapy group med\_ind control  
## 1 4 5 8 3 10  
## 2 5 4 8 1 9  
## 3 4 3 6 3 8  
## 4 6 5 9 2 7  
## 5 5 5 10 1 9

What is the k?

What is the number of participants per level?

What is the total number of participants?

What is the sum of each group?

What is the mean of each group?

What is the sum of squared Xs for reach group?

What is the total sum?

What is the total sum of all squared values?

What is the sum of squares total?

What is the sum of squares between/treatment?

What is the sum of squares within/error?

What are the degrees of freedom between?

What are the degrees of freedom within? (N - k)

What are the degrees of freedom total? (N - 1)

What is the mean squares between value?

What is the mean squares within value?

What is the F-obtained value? Is it statistically significant?

Calculate the Tukey HSD

Calculate the Eta Squared

Please List the Finding(s).