- 1. A sample of N=50 people from a population with mean equal to 50 is given a treatment. After treatment, we find a sample mean of  $\overline{X}=51$  with SS=27,220. Does the treatment result in larger scores compared to the general population?
  - (a) explicitly define  $\mathcal{H}_0$  and  $\mathcal{H}_1$ .
  - (b) calculate and report the observed t-score

(c) calculate and report the resulting Bayes factor

(d) calculate and report the posterior probability of the "winning" model.

(e) write a good conclusion

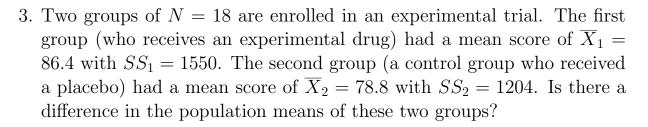
- 2. A sample of N=16 individuals is selected from a population with mean 70 and given a treatment. After treatment, the sample mean is found to be  $\overline{X}=63.4$  with SS=960. Does the treatment result in smaller scores compared to the general population?
  - (a) explicitly define  $\mathcal{H}_0$  and  $\mathcal{H}_1$ .
  - (b) calculate and report the observed t-score

(c) calculate and report the resulting Bayes factor

(d) calculate and report the posterior probability of the "winning" model.

(e) write a good conclusion

Problem session 10



- (a) explicitly define  $\mathcal{H}_0$  and  $\mathcal{H}_1$ .
- (b) calculate and report the observed t-score

(c) calculate and report the resulting Bayes factor

(d) calculate and report the posterior probability of the "winning" model.

(e) write a good conclusion