

MATH 3424 Tutorial

October 30, 2020

1 Review

Chapter 2 Sec 1 one categorical variable.

2 Exercises

Using the following data set

group									number	mean	variance
A_1	1600	1610	1650	1680	1700	1700	1780		7	1674.286	3795.238
A_2	1500	1640	1400	1700	1750				5	1598	21020
A_3	1640	1550	1600	1620	1640	1600	1740	1800	8	1648.75	6669.643
A_4	1510	1520	1530	1570	1640	1600			6	1561.667	2616.667

The overall sample variance is 8633.385.

1. Write down a one-way classification model (a model in terms of population means of group) for the analysis of the above data set. Define the variables clearly.
2. Estimate the unknown parameters in (a).

3. Test all population means of groups are equal at $\alpha = 0.05$. Write down the test statistic, the critical value and your conclusion clearly.

4. Test population means of group A_1 and A_4 are equal at $\alpha = 0.05$. Write down the test statistic, the critical value and your conclusion clearly.