Problem 1: Comparing second-hand bike shops

The files `wheelworks.txt` and `cyclecraft.txt` contain the prices (in €) and the condition (a real number from 0 to 12) of 20 models of vintage bikes sold from two second-hand bike shops *WheelWorks* and *CycleCraft*.

a) A friend of yours suggests that, in general, bikes are more affordable and in better condition at *CycleCraft* compared to *WheelWorks*. Do you agree with this statement? Support your answer with a statistical test at level 95%, reporting the p-value.

b) Which are the assumptions of the previous test? Are they met?

c) Provide the plot of the confidence region at level 95% for the mean difference in price and condition between the two shops.

d) Provide four Bonferroni simultaneous confidence intervals of global level 95% for the mean and the variance of the difference in price and condition. Interpret the results of the test at point (a) through the intervals.

Upload your results here:
https://forms.office.com/e/ttkdQWPk1q