Mini Quiz 1

- A diet was implemented for 20 persons for 10 days, and the data of abdominal circumference before (X1) and after (X2) the diet were obtained. We would like to test whether this diet is effective in reducing the abdominal circumference at a 5% level of significance.

    1. Describe H0 and H1
    2. Program: t, p = ???
    3. Describe the conclusion of this test when "t > 0 and p = 0.07" is obtained as the result of the execution of the program

Ans. of Mini Quiz 1

- A diet was implemented for 20 persons for 10 days, and the data of abdominal circumference before (X1) and after (X2) the diet were obtained. We would like to test whether this diet is effective in reducing the abdominal circumference at a 5% level of significance.

Paired two samples t test, one-tailed

1.
   H0: Population means of abdominal circumference before and after the diet for each person are the same.
   H1: Population mean of abdominal circumference after the diet are smaller than that before the diet for each person
2. t, p = ss.ttest_1samp(X1-X2, 0)
3. t > 0 and p / 2 = 0.07 / 2 = 0.035 < 0.05 (signif. level), so H0 is rejected.
   Conclusion: Population mean of abdominal circumference after the diet for each person is significantly smaller than that before the diet.