PRACTICE CLASS ASSIGNMENT 0

DEADLINE AUGUST 6, 5 PM

Feedback for A0Q0

The correct distribution type is F.

The correct H0 hypothesized variable is sigma(A)/sigma(B).

The correct H0 sign is >=.

The correct H0 hypothesized value is 1

The correct H1 hypothesized variable is sigma(A)/sigma(B).

The correct H1 sign is <.

The correct H1 hypothesized value is 1

The correct test value is 0.6721045369694018

The correct critical value is 0.46645402121644747

The conclusion is correct.

The question states that we need a flow that is consistently as close as possible to 237.7 ampere, so we are testing for variances. We need to do an F-test, and the hypotheses are :

$H_0 : \sigma_A/\sigma_B \geq 1$

$H_1 : \sigma_A/\sigma_B < 1$

We calculate the test value as follows:

$$F_{calc} = \frac{\sigma_1^2}{\sigma_2^2} = \frac{(9.1)^2}{(11.1)^2} = 0.6721 \tag{1}$$

We have a left-tail test, so we need α of the mass in the left tail. In Excel (or Open Office Calc) f.inv(0.05,19,21) results in a critical value of 0.4665. This means that we are not in the rejection region, and we accept the Null Hypothesis. The conclusion is that the Generator A does not work significantly better than Generator B.

Mark for this part = 10.0%

Total mark = 10.0
