Group Member Names: _____

If you have group members who collaborated but were not logged into the Zoom session, please note in the submission comments how they collaborated on the learning activity.

The manufacturers of Ramen noodles, a favorite college student staple, are interested in whether the variance of sodium levels in their product has **changed** after they began using different ingredients. With the old ingredients, the sodium levels of Ramen were determined to have a population standard deviation of 110 mg. A random sample of 20 packages made with the new ingredients was analyzed and found to have a sample standard deviation of 139.2 mg. Suppose that the sodium levels are normally distributed. Is there evidence at the $\alpha = 0.10$ level that the variance of the sodium content has changed with the new ingredients?

1. Define the parameter in context and state your hypotheses.

2. State and verify that the appropriate conditions for inference are met.

3. Compute the test statistic for this sample. Label it using the correct symbol.

4. Find the critical values for the test and state the rejection region. <u>Include a sketch</u> that shows the rejection region with the critical values on the horizontal axis and the appropriate areas shaded.

5. What is your decision about the null hypothesis? Provide support for your decision.

6. Summarize the results of your test in context.