Hypothesis Tests, Worksheet #8   Name _____

Within a school district, students were randomly assigned to one of two Math teachers - Ms. Smith and Mr. Jones. After the assignment, Ms. Smith had 30 students, and Mr. Jones had 25 students. At the end of the year, each class took the same standardized test. Ms. Smith's students had an average test score of 85, with a standard deviation of 15; and Mr. Jones' students had an average test score of 78, with a standard deviation of 10. Test the hypothesis that Ms. Smith and Mr. Jones are equally effective teachers. Use a 0.10 level of significance. (Assume that student performance is approximately normal.)

    1. State the Type of Hypothesis or the TI calculator function to be used (and any settings):

    2. State the Null and Alternative Hypotheses:
       H_0:

       H_a:

    3. List all the data entered into your calculator to find the test statistic, or state the formula used if solving by hand.

    4. Provide the output of the calculator. If solving by hand, find the test statistic and convert this value to a P-value using your calculator or the table.

5. Graph the critical values and the test statistic on the normal distribution.

6. What is your conclusion based on the critical values/test statistic, or the significance levels/p-values? Do you reject the null or fail to reject the null?

7. Restate your conclusion in the context of the problem (circle your choice):

   There IS/IS NOT sufficient evidence Ms. Smith and Mr. Jones ARE/ARE NOT equally effective teachers.