Hypothesis Tests, Worksheet #1 Name _____

A biologist was interested in determining whether sunflower seedlings treated with an extract from *Vinca minor* roots resulted in a lower average height of sunflower seedlings than the standard height of 15.7 cm. The biologist treated a random sample of $n = 33$ seedlings with the extract and subsequently obtained the following heights:

11.5	11.8	15.7	16.1	14.1	10.5
15.2	19.0	12.8	12.4	19.2	13.5
16.5	13.5	14.4	16.7	10.9	13.0
15.1	17.1	13.3	12.4	8.5	14.3
12.9	11.1	15.0	13.3	15.8	13.5
9.3	12.2	10.3			

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 that sunflower seedlings treated with an extract from *Vinca minor* roots DO/DO NOT result in a lower average height of sunflower seedlings than the standard height.