

Suppose that we want to test the hypothesis with a significance level of $\alpha = 0.01$ that the climate has changed since industrialization. Suppose that the mean temperature throughout history is 50 degrees. During the last 40 years, the mean temperature has been 51 degrees and suppose the population standard deviation is 2 degrees. What can we conclude?

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 the mean temperature since industrialization HAS/HAS NOT changed over the long-term average.