**Activity #15**

**Name:**

**High School:**

**HSTA Teacher:**

Problem 1

Vaccination from the COVID-19 virus is an important step in the of WV coming out of quarantine. We wondered what information our student body knew about the vaccine. We gathered data from the CDC and made a multiple-choice test with ten questions. We then administered the test to 15 1st year and 15 3rd year students. We wanted to know if the mean test scores of the population of the 1st year students were different than the population of the 3rd year students. Use the two-tailed t-test for unequal variances.

Write Statements for the following:

* Introduction
* Hypothesis
* Criteria
* Results
* Conclusion and Discussion

|  |  |
| --- | --- |
| 1st Year | 3rd Year |
| 73 | 79 |
| 78 | 82 |
| 57 | 88 |
| 66 | 84 |
| 53 | 78 |
| 73 | 73 |
| 77 | 79 |
| 61 | 81 |
| 73 | 73 |
| 67 | 83 |
| 52 | 81 |
| 54 | 76 |
| 64 | 85 |
| 101 | 69 |
| 53 | 78 |

Problem 2

The following data represent birth rate (per 1000 residential population) for independent random samples of counties in California and Maine.

Reference: County and City Data Book 12th edition, U.S. Dept. of Commerce

Do the states have the same birth rate? Use an independent, two tailed t-test.

Write Statements for the following:

* Introduction
* Hypothesis
* Criteria
* Results
* Conclusion and Discussion

|  |  |
| --- | --- |
| California | Maine |
| 14.1 | 15.1 |
| 18.7 | 14 |
| 20.4 | 13.3 |
| 20.7 | 13.8 |
| 16 | 13.5 |
| 12.5 | 14.2 |
| 12.9 | 14.7 |
| 9.6 | 11.8 |
| 17.6 | 13.5 |
| 18.1 | 13.8 |
| 14.1 | 16.5 |
| 16.6 | 13.8 |
| 15.1 | 13.2 |
| 18.5 | 12.5 |
| 23.6 | 14.8 |
| 19.9 | 14.1 |
| 19.6 | 13.6 |
| 14.9 | 13.9 |
| 17.7 | 15.8 |
| 17.8 |  |
| 19.1 |  |
| 22.1 |  |
| 15.6 |  |