

Lab 10 / Task 1

Task 2 (/Labs/ViewLab/10?TaskId=63)

Max grade for this lab is 110 but the scale is still 100 point. The 10 points is extra credit.

The following video might be helpful: [Histograms \(https://www.youtube.com/watch?v=Ja8DAGTP-RQ\)](https://www.youtube.com/watch?v=Ja8DAGTP-RQ)

In what follows use any of the following tests/procedures: Regression, multiple regressions, confidence intervals, one-sided t-test or two-sided t-test. All the procedures should be done with 5% P-value or 95% confidence interval.

Upload data [HeartRate_Exercise \(/Content/DataFiles/HeartRate_Exercise.txt\)](#). These data are based on 45 randomly chosen High school students.

SETUP: It is believed that High school students who do not exercise have heart rate (at rest) above 70. Given the data your job is to confirm or disprove this belief.

1. What test/procedure did you perform?

- ☒ a. One-sided t-test
- ☐ b. Two-sided t-test
- ☐ c. Regression
- ☐ d. Confidence interval

2. What is the P-value/margin of error?

- ☐ a. 1.56075E-45
- ☐ b. 3.1215E-45
- ☐ c. 6.149555
- ☐ d. 8.065421
- ☐ e. None of these

3. Statistical Interpretation

- ☐ a. Since P-value is very small we are confident that the average heart rate is above 70.
- ☐ b. Since P-value is very small we are very confident that the averages are different.
- ☐ c. Since P-value is very small we are confident that the slope of regression line is not zero.
- ☐ d. We are 95% certain that the confidence interval is [70.268, 86.399].
- ☐ e. None of these

4. Conclusion

- ☐ a. Yes, I am confident that the above assertion is correct.
- ☐ b. No, we cannot claim that the above assertion is correct.

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