



Bookmarks

▶ Important Pre-Course Survey

▶ Contact Us

▶ How To Navigate the Course

▶ Discussion Board

▶ Office Hours

▶ Week 0: Introduction to Data (Optional Review)

▶ Week 1: Sampling

▶ Week 2: Hypothesis Testing (One Group Means)

▼ Week 3: Hypothesis Testing (Two Group Means)

#### Readings

Reading Check due May 03, 2016 at 17:00 UTC

#### Lecture Videos

Comprehension Check due May 03, 2016 at 17:00 UTC

Week 3: Hypothesis Testing (Two Group Means) &gt; Lab &gt; Analyze the Data



Bookmark

Reflect on the Question

Analyze the Data

Draw Conclusions

## Primary Research Questions

1. Do students at UT spend more time on homework per week in college than they did in high school?
2. Do students in fraternities and sororities get less sleep on the weekends than other college students?

## Analysis

Let's break this question down into the different statistics that you will need to construct your answer. Be sure that your R output includes all of the following components.

For each hypothesis test,

1. Create vectors of the scores that you wish to analyze.
2. Check the assumption of normality by generating a histogram for each variable of interest.
3. Find the t-statistic and p-value.
4. Interpret the results of each test.

**NOTE:** If you are running *directional* hypotheses tests, remember that you must modify the code to reflect this direction.


A one-sided test looks like this:

`t.test(Variable1, Variable2, alternative = 'less'), when you expect Mean1 < Mean2`

`t.test(Variable1, Variable2, alternative = 'greater'), when you expect Mean1 > Mean2`

## R Tutorial Videos


## Pre-Lab

Pre-Lab due May 03,  
2016 at 17:00 UTC 

## Lab

Lab due May 03, 2016  
at 17:00 UTC 

## Problem Set

Problem Set due May  
03, 2016 at 17:00 UTC 

- ▶ Week 4:  
Hypothesis  
Testing  
(Categorical  
Data)

(5/5 points)

## Lab Question 1

1a. On **average**, students spent how many hours more on homework each week in college than they did in high school? (round to 2 decimal)



Answer: 10.95

1b. What was the **t-statistic** for this test? (Round to 2 decimal places. Depending on how you solved this problem, your answer will be either negative or positive. Please report as a positive or absolute value.)



Answer: 16.81

1c. How many **degrees of freedom**? (no decimal places)



Answer: 213

1d. What was the **p-value**?



Answer: less than 0.05

1e. Based on these test results, we would conclude that students \_\_\_\_\_ spend more time on homework in college than they did in high school.



Answer: do

*You have used 1 of 1 submissions*

(5/5 points)

## Lab Question 2

2a. On average, students who are Greek sleep how many hours **less** than Non-Greek students on Saturday nights? (report to 1 decimal place)



Answer: 0.3

2b. What is the **t-statistic** for this test? (Report to 3 decimal places. Depending on how you solved this problem, your answer will be either negative or positive. Please report as a positive or absolute value.



Answer: .981

2c. How many **degrees of freedom**? (round to no decimal places)



Answer: 63

2d. What was the **p-value**? (report to 3 decimal places)



Answer: 0.165

2e. Based on these results, we would conclude that people who are in fraternities or sororities \_\_\_\_\_ get less sleep on the weekends than other college students.



Answer: do not

*You have used 1 of 1 submissions*

(1/1 point)

3. The **Normality** assumption  Answer: was met in each hypothesis test.

*You have used 1 of 1 submissions*



© edX Inc. All rights reserved except where noted. EdX, Open edX and the edX and Open EdX logos are registered trademarks or trademarks of edX Inc.

