

UTAustinX: UT.7.20x Foundations of Data Analysis - Part 2



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) > Problem Set > Question 3

■ Bookmark

Question 3

Some nerve cells have the ability to regenerate. Researchers think that these cells may generate creatine phosphate (CP) to stimulate new cell growth.

To test this hypothesis, researchers cut the nerves emanating from the left side of the spinal cord in a sample of rhesus monkeys, while the nerves on the right side were kept intact. They then compared the CP levels (mg/100g) in nerve cells on both sides.

Monkey ID	CP on Left Side (regenerating)	CP on Right Side (control)
1	16.3	11.5
2	4.8	3.5
3	10.7	12.8
4	14.0	7.9
5	15.7	15.2
6	9.9	9.8
7	29.3	24.0
8	20.4	14.9
9	15.7	12.6
10	7.6	8.2
11	16.2	8.4

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 UT

Week 4:
 Hypothesis
 Testing
 (Categorical
 Data)

12	14.7	11.0
13	15.0	12.5
14	8.4	9.2
15	23.3	17.5
16	17.7	11.1

(1/1 point)

3a. Which is the appropriate method for testing the researchers' hypothesis?

- Dependent t-test
- Independent samples t-test
- Single sample z-test

You have used 1 of 1 submissions

Assume the researchers calculated the difference scores as d = CPleft - CPright.

They set a = 0.05.

(1/1 point)

3b. How many degrees of freedom are there?

15

~

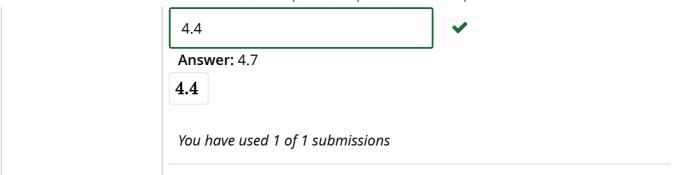
Answer: 15

15

You have used 1 of 1 submissions

(1/1 point) 3c. What is the t-critical value? (Round to 3 decimal places.)
1.753
Answer: 1.753
1.753
You have used 1 of 1 submissions
(1/1 point) 3d. How much of a difference in creatine phosphate was observed, on average, between the left and right nerve cells? (Report as a positive value rounded 1 decimal place).
3.1
Answer: 3.1
3.1
You have used 1 of 1 submissions
(1/1 point) 3e. What is the Standard Deviation of the difference scores? (Round to 2 decimal places.)
3.05
Answer: 3.05
3.05
You have used 1 of 1 submissions
(1/1 point) 3f. What is the Standard Error for your t-test? (Round to 2 decimal places.)
0.76
Answer: .76
0.76

You have used 1 of 1 submissions
(1/1 point)
3g. What is your test statistic ? (Round to 2 decimal places.)
4.08
Answer: 4.06
4.08
You have used 1 of 1 submissions
(1/1 point) 3h. Is there sufficient evidence to suggest that the levels of creatine phosphate are higher in regenerating cells than they are in the normal (control) cells?
● Yes ✔
O No
You have used 1 of 1 submissions
(1/1 point) 3i. The researchers finish their analysis by calculating a 95% confidence interval for the true increase in CP levels in rejuvenating nerve cells. What are the lower and upper bounds? (Round each to 1 decimal place.)
Lower bound
1.8
Answer: 1.5
1.8
You have used 1 of 1 submissions
(1/1 point) Upper bound (Round to 1 decimal place.)



© All Rights Reserved



© 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.

















