

# Feedback — Unit 4 Lab - Inference for Numerical Variables

[Help](#)

You submitted this homework on **Sun 30 Mar 2014 10:08 AM PDT**. You got a score of **11.00** out of **11.00**.

## INSTRUCTIONS:

Read these before you get started.

Lab instructions can be found in [this document](#).

(You may also find the document at this address:

[https://d396qusza40orc.cloudfront.net/statistics%2FDocuments%2FLabs%2FLab\\_Unit4\\_Lab4.pdf](https://d396qusza40orc.cloudfront.net/statistics%2FDocuments%2FLabs%2FLab_Unit4_Lab4.pdf).)

As you go through the contents of the lab instructions document you will encounter multiple choice questions, make sure to submit your answers to those questions here to get credit.

You may attempt this lab as many times as you like (well, Coursera limits number of attempts at 100, but chances are you won't need that many!). Notes:

- To complete the lab in RStudio, you will first need to make sure that you have **both** R and RStudio installed. You can download R at <http://cran.r-project.org>, and RStudio at <http://www.rstudio.com/>. See [this video](#) for step-by-step installation instructions if needed).
- If you prefer to complete the exercises in the interactive web-based DataCamp environment, [click here](#).

## Question 1

There are 1,000 cases in this data set, what do the cases represent?

Your Answer	Score	Explanation
<input type="radio"/> The fathers of the children		
<input type="radio"/> The days of the births		
<input type="radio"/> The hospitals where the births took place		
<input checked="" type="radio"/> The births	✓ 1.00	
Total	1.00 / 1.00	

## Question 2

How many mothers are we missing weight gain data from?

Your Answer	Score	Explanation
<input type="radio"/> 0		
<input type="radio"/> 13		
<input checked="" type="radio"/> 27	✓ 1.00	
<input type="radio"/> 31		
Total	1.00 / 1.00	

## Question 3

The sampling distribution is calculated by resampling from the population, the bootstrap distribution is calculated by resampling from the sample.

Your Answer	Score	Explanation
<input checked="" type="radio"/> True	✓ 1.00	
<input type="radio"/> False		
Total	1.00 / 1.00	

## Question 4

To construct the 95% bootstrap confidence interval using the percentile method, we estimate the values of the 5<sup>th</sup> and 95<sup>th</sup> percentiles of the bootstrap distribution.

Your Answer	Score	Explanation
<input checked="" type="radio"/> False	✓ 1.00	
<input type="radio"/> True		
Total	1.00 / 1.00	

## Question 5

The bootstrap distribution of the median weight gain is a smooth, unimodal, symmetric distribution that yields a reliable confidence interval estimate.

Your Answer	Score	Explanation
<input checked="" type="radio"/> False	✓ 1.00	
<input type="radio"/> True		
Total	1.00 / 1.00	

## Question 6

Based on the plot from the previous exercise, which of the following is false about the relationship between habit and weight?

Your Answer	Score	Explanation
<input checked="" type="radio"/> Both distributions are slightly right skewed.	✓ 1.00	
<input type="radio"/> The IQRs of the distributions are roughly equal.		
<input type="radio"/> Range of birth weights of babies born to non-smoker mothers is greater than that of babies born to smoker mothers.		
<input type="radio"/> Median birth weight of babies born to non-smoker mothers is slightly higher than that of babies born to smoker mothers.		
Total	1.00 / 1.00	

## Question 7

Change the type argument to "ci" to construct and record a confidence interval for the difference between the weights of babies born to smoking and non- smoking mothers. Which of the following is the best interpretation of the interval?

Your Answer	Score	Explanation
<input checked="" type="radio"/> We are 95% confident that babies born to nonsmoker mothers are on average 0.05 to 0.58 pounds heavier at birth than babies born to smoker mothers.	✓ 1.00	
<input type="radio"/> We are 95% confident that babies born to nonsmoker mothers are on average 0.05 to 0.58 pounds lighter at birth than babies born to smoker mothers.		
<input type="radio"/> We are 95% confident that the difference in average weights of babies whose moms are smokers and nonsmokers is between 0.05 to 0.58 pounds.		
<input type="radio"/> We are 95% confident that the difference in average weights of babies in this sample whose moms are smokers and nonsmokers is between 0.05 to 0.58 pounds.		
Total	1.00 / 1.00	

## Question 8

Now, a non-inference task: Determine the age cutoff for younger and mature mothers. Use a method of your choice. What is the maximum age of a younger mom and the minimum age of a mature mom, according to the data?

Your Answer	Score	Explanation
<input type="radio"/> The maximum age of younger moms is 33 and minimum age of mature moms is 34.		
<input type="radio"/> The maximum age of younger moms is 35 and minimum age of mature moms is 36.		
<input checked="" type="radio"/> The maximum age of younger moms is 34 and minimum age of mature moms is 35.	✓ 1.00	
<input type="radio"/> The maximum age of younger moms is 32 and minimum age of mature moms is 33.		
Total	1.00 / 1.00	

## Question 9

Which of the following methods is appropriate for testing for a difference between the average vocabulary test scores among the various social classes? *Hint: Consider the number of levels of the class variable.*

Your Answer	Score	Explanation
<input checked="" type="radio"/> ANOVA	1.00	
<input type="radio"/> Z test		
<input type="radio"/> $\chi^2$ test		
<input type="radio"/> T test		
Total	1.00 / 1.00	

## Question 10

Calculate the modified  $\alpha$  ( $\alpha^*$ ) to be used for these tests.

Your Answer	Score	Explanation
<input checked="" type="radio"/> $\alpha^* = \alpha/6 = 0.0083$	1.00	
<input type="radio"/> $\alpha^* = \alpha/2 = 0.025$		
<input type="radio"/> $\alpha^* = \alpha = 0.05$		
<input type="radio"/> $\alpha^* = \alpha/4 = 0.0125$		
Total	1.00 / 1.00	

## Question 11

View the p-values of the pairwise tests from the ANOVA output. Which of the following pairs of means are concluded to be different at the modified significance level?

Your Answer	Score	Explanation
-------------	-------	-------------

☐ Upper and lower☒ Middle and lower

1.00

☐ Middle and upper☐ Working and upper☐ Working and lower

Total

1.00 / 1.00

## Question 12

The following questions are not graded, but your feedback is very much appreciated and immensely useful for the development of the course.

This lab covered material that is covered in the class.

**Your Answer****Score****Explanation**☐ Strongly Disagree☐ Disagree☐ Neutral☐ Agree☐ Strongly Agree

Total

0.00 / 0.00

## Question 13

The lab improved my understanding of these topics.

**Your Answer****Score****Explanation**☐ Strongly Disagree☐ Disagree☐ Neutral

- ☐ Agree
- ☐ Strongly Agree

Total 0.00 / 0.00

Question 14

The instructions were clear and it was easy to understand what was wanted.

Your Answer	Score	Explanation
<input type="radio"/> Strongly Disagree		
<input type="radio"/> Disagree		
<input type="radio"/> Neutral		
<input type="radio"/> Agree		
<input type="radio"/> Strongly Agree		
Total	0.00 / 0.00	

Question 15

The data were relevant and interesting to me.

Your Answer	Score	Explanation
<input type="radio"/> Strongly Disagree		
<input type="radio"/> Disagree		
<input type="radio"/> Neutral		
<input type="radio"/> Agree		
<input type="radio"/> Strongly Agree		
Total	0.00 / 0.00	

# Question 16

The length of time took to complete lab.

Your Answer	Score	Explanation
<input type="radio"/> Less than 30 minutes		
<input type="radio"/> Between 30 minutes and 1 hour		
<input type="radio"/> Between 1 hour and 2 hours		
<input type="radio"/> More than 2 hours		
Total	0.00 / 0.00	