Week 3 Lab
Quiz, 11 questions

11/11 points (100%)

✓ **Congratulations! You passed!**

✔ 1 / 1 point

1.
How many of the 13 variables are categorical?

○ 5

○ 6

◉ 7

▲

Correct
Correct.

○ 8

✔ 1 / 1 point

2.
Use visualization such as a histogram and summary statistics tools in R to analyze the distribution of **weight**. Which of the following best describes the distribution of **weight**?

◉ Left skewed

▲

Correct
Correct.

○ Right skewed

○ Uniformly distributed

○ Normally distributed
Week 3 Lab
Quiz, 11 questions   **11/11 points (100%)**

✔   1 / 1
       point

3.

Which of the following corresponds to the **95%** credible interval for the average birth weight of all full-term babies born in North Carolina?

○ There is a 95% chance that babies weigh 7.4 to 7.5 pounds.

○ There is a 95% chance that the average weights of babies in this sample is between 7.4 an 7.5 pounds.

◉ There is a 95% chance that babies on average weigh 7.4 to 7.5 pounds

Correct
Make sure you have input the correct credible level.

✔   1 / 1
       point

4.

Based of Jeffrey's scale for interpretation of a Bayes factor how should we describe the evidence in favor of H_1 from the results above?

○ Not worth a bare mention

○ Positive

○ Strong

◉ Very Strong

Correct

✔   1 / 1
       point

5.

For predicting the birth weight of a new full term baby in NC:

Week 3 Lab

11/11 points (100%)

○ There is 50% chance that their birth weight will be 7.4 pounds.

○ There is a 95% chance that their birth weight will be on average 7.4 to 7.5 pounds.

○ There is a 95% chance that their birth weight will be 7.4 to 7.5 pounds

⦿ There is a 95% chance that their birth weight will be 5.4 to 9.5 pounds

▲

Correct
Review calculation of credible interval.

✔   1 / 1
         point

6.

Construct a side-by-side boxplot of **habit** and **weight** for the data using full term births and compare the two distributions. Which of the following is **false** about the relationship between **habit** and **weight**?

○ Median birth weight of babies born to non-smokers is slightly higher than that of babies born to smokers.

○ Range of birth weights of female babies are roughly the same as that of male babies.

⦿ Both distributions are approximately symmetric.

▲

Correct
Correct.

○ The IQRs of the distributions are roughly equal.

✔   1 / 1
         point

7.

Based on the Bayes factor calculated above, how strong is evidence against H_1?

○ Not worth a bare mention

○ Positive

○

Strong

Week 3 Lab
Quiz, 11 questions   **11/11 points (100%)**

Correct

Review interpretation of Bayes factors.

○ Very Strong

✔   1 / 1
     point

8.

How would the Bayes factor above change if we were to increase the prior probability of H_2 to 0.75? (Hint: you may change the prior of H_1 and H_2 by specifying `hypothesis_prior = c(a, b)` where $P(H_1) = a$, $P(H_2) = b$, and $a + b = 1$.)

○ Get bigger

○ Get smaller

◉ Stay the same

▲

Correct

Correct. The calculation of Bayes factors does not involve prior or posterior probability of either hypothesis.

✔   1 / 1
     point

9.

How would the Bayes factor for H_2 to H_1 change if we were to change the scale in the Cauchy prior rscale = sqrt(2)/2?

○ Stay the same

○ Get smaller

◉ Get bigger

▲

Correct

Week 3 Lab $^{1\,/\,1}_{\text{point}}$
Quiz, 11 questions

11/11 points (100%)

10.

Based on the 95% credible interval for the differences in full term birth weights for nonsmokers and smoker:

○ There is a 95% chance that babies born to nonsmoker mothers are on average 0.11 to 0.54 pounds lighter at birth than babies born to smoker mothers.

○ There is a 95% chance that the difference in average weights of babies whose moms are smokers and nonsmokers is between 0.11 to 0.54 pounds.

○ There is a 95% chance that the difference in average weights of babies in this sample whose moms are nonsmokers and smokers is between 0.11 to 0.54 pounds.

◉ There is a 95% chance that babies born to nonsmoker mothers are on average 0.11 to 0.54 pounds heavier at birth than babies born to smoker mothers.

Correct
Review interpretation of Bayes factors.

✔ 1 / 1
point

11.

Conduct the same hypothesis test for the mean of the difference in perceived stress scale for the **sport** group. Based of Jeffrey's scale for interpretation of a Bayes factors how should we describe the evidence against H_1 from the results?

○ Strong

◉ Positive

Correct

○ Not worth a bare mention

○ Very strong

Week 3 Lab

Quiz, 11 questions