Week 4 Lab

✓ **9/9** points earned (100%)

Quiz passed!

✓ 1 / 1 points

1.

Is this an observational study or an experiment?

○ Observational study

Correct

○ Experiment

✓ 1 / 1 points

2.

Which of the following statements is **false** about the distribution of wage?

○ The median of the distribution is 905.

○ 25% of respondents make more than 1160 dollars per week.

◉ 7 of the respondents make less than 300 dollars per week.

Correct

○

wage is right-skewed, meaning that more respondents fall below the mean wage than above it.

✓ 1 / 1 points

3.

Examine the residuals of m_wage_iq. Is the assumption of normally distributed errors valid?

○ Yes, since the distribution of the dependent variable (wage) is roughly normally distributed.

○ Yes, since the distribution of the residuals of the model looks approximately normal.

○ No, since the distribution of the residuals of the model is left-skewed.

◉ No, since the distribution of the residuals of the model is right-skewed.

Correct

✓ 1 / 1 points

4.

Under the reference prior $p(\alpha, \beta, \sigma^2) \propto 1/\sigma^2$, give a 95% posterior credible interval for β, the coefficient of IQ.

○ (0.00793, 0.00967)

◉ (0.00709, 0.01050)

Correct

○ (0.00663, 0.01098)

○ (0.00010, 0.01750)

5.

From the model, all else begin equal, who would you expect to make more: a married black man or a single non-black man?

- ⦿ The married black man

Correct

- ○ The single non-black man

6.

Elimination of which variable from the full model yielded the lowest BIC?

- ○ brthord
- ○ sibs
- ⦿ feduc

Correct

- ○ meduc

7.

Based on this reduced data set, according to Bayesian model averaging, which of the following variables has the lowest marginal posterior inclusion probability?

- ○

○ kww

○ black

○ south

◉ age

Correct

✓ 1 / 1 points

8.

True or False: The naive model with all variables included has posterior probability greater than 0.5. (Use a Zellner-Siow null prior for the coefficients and a Beta-Binomial (1,1) prior for the models.)

◉ True

Correct

○ False

✓ 1 / 1 points

9.

Estimate a 95% central credible interval for a new observation y_5.

○ (-3.71, 5.73)

◉ (-2.06, 4.10)

Correct

○ (-1.18, 3.19)