✖ Try again once you are ready.

Required to pass: 80% or higher

You can retake this quiz up to 3 times every 8 hours.

Back to Week 4

Retake

✔ 1 / 1 point

1. Is this an observational study or an experiment?

- (●) Observational study

Correct
Correct.

- ( ) Experiment

✔ 1 / 1 point

2. Which of the following statements is **false** about the distribution of weekly wages?

- ( ) The median of the distribution is 905.
- ( ) 25% of respondents make at least 1160 dollars per week.
- (●) 10 of the respondents make strictly less than 300 dollars per week.

Correct
Correct.

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

✖ 0 / 1 point

3. Fit a new model that uses **educ** (education) to predict average weekly wages. Using the estimates from the R output, write the equation of the posterior mean of the regression line and obtain a 95% credible interval for the coefficients.

What does the slope tell us in the context of the relationship between education and earnings?

- Each additional year of education increases weekly wages by $60.21.
- Each additional year of education increases weekly wages by $146.95.

This should not be selected
**Where can this be found? The following is from past question: Review the distribution of the residuals.

- For each additional year of education, there is a 95% chance that average weekly wages will possibly decrease by $5.56 or increase by $299.47.
- For each additional year of education, there is a 95% chance that average weekly wages will increase by $49.04 to $71.39

✖ 0 / 1 point

4. Which of the following statements about the residual plots are **false**?

- The residuals appear to be randomly distributed around 0
- The residuals are strongly left skewed, hence the normal distribution of errors condition is not met
- The variability of residuals appears to increase as the fitted increase, suggesting that the constant variance assumption does not hold.

This should not be selected

- There are more individuals where the model under predicts weekly wages rather than over estimates weekly wages.

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1 / 1 point

5. Using the definition of outlier above, which statement is **false**?

- Case 434 has a probability of close to 1 that it an outlier under the normal error model for regressing **lwage** on iq
- Case 514 has a probably of close to 1 that it an outlier under the normal error model for regressing **lwage** on iq
- Case 616 has a probably of close to 1 that it an outlier under the normal error model for regressing **lwage** on iq

Correct

- Case 784 has a probably of close to 1 that it an outlier under the normal error model for regressing **lwage** on iq

✔

1 / 1 point

6. Use the new value of k to calculate the posterior probability of each observation being an outlier. Which observation has a posterior probability of being an outlier that exceeds the prior probability of being an outlier?

- Case 434
- Case 514
- Case 616
- Case 784

Correct

✖

0 / 1 point

7. 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
- The single non-black man

This should not be selected

✔

1 / 1 point

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

- brthord
- sibs

feduc

Correct
Correct.

meduc

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0 / 1 point

9. 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

This should not be selected
Make sure you get the correct order of the variables.

age

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1 / 1 point

10. 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 $\mathrm{Beta}(1,1)$ prior for the models.)

True

False

Correct

1 / 1 point

11. Based on these results, which covariates are included in **all** of the following: the best predictive model, the median probability model, and the highest posterior probability model?

- kww, married, urban
- married, age, black
- black, south, married
- meduc, urban, married

Correct

1 / 1 point

12. Repeat these calculations for a 95% prediction interval for the individual who is predicted to have the highest predicted wages based on the best predictive model.

- [414, 1717]
- [782, 1571]
- [782, 3154]

Correct

- [706, 2950]