Business statistics Project

All analysis based on general survey data 2008 (dataset + codebook are attached)

Q1 :One of the questions in the 2008 General Social Survey was, if you were born outside the United States, at what age did you permanently move to the United States (AGECMEUS)?
a. Calculate the mean, variance, and standard deviation.

b. Draw a histogram.

c. Use the Empirical rule, if applicable, or Chebysheff's Theorem to interpret the mean and standard deviation.

Q2: Estimate with 95% confidence the mean number of years with current employer (CUREMPYR).

Q3 Estimate with 90% confidence the proportion of Americans whose income is at least $75,000 (INCOME06).

Q4: Is there sufficient evidence to conclude that people who work for the government (WRKGOVT: 1 = Government, 2 = Private) work fewer hours (HRS)?

Q5: For each of the following variables, conduct a test to determine whether Democrats and Republicans (PARTY 1 = Democrat, 3 = Republican) differ in their correct answers to the following questions:

Correct answers to ODDS1: A doctor tells a couple that there is one chance in four that their child will have an inherited disease. Does this mean that if the first child has the illness, the next three will not? 1 = Yes, 2 = No. Correct answer: No.

Q6: Can we infer from the data that the proportion of Americans earning at least $75,000 is greater in 2008 than in 2006 (INCOME06)?

Q7: Can we infer from the data that the majority of Americans support capital punishment formurderers? (CAPPUN: 1 = Favor, 2 = Oppose).

Q8: Is there enough evidence to infer that differences in the amount of television watched (TVHOURS) differ between classes (CLASS)?

Q9: Do the data provide enough statistical evidence to conclude that differences in number of hours worked (HRS) exist between the three races (RACE)?

Q10: Is there sufficient evidence to conclude that less than 50% of Americans support gun laws (GUNLAW)?

Q11: Can we infer from the data that Democrats and Republicans (PARTYID: 0, 1 = Democrat, 5, 6 = Republican) differ in their position on whether the government should reduce income differences between rich and poor (EQWLTH)?

Q12: How does income affect a person's response to the question, Should the government improve the living conditions of poor people (HELPPOOR)? Test the relationship between income (INCOME) and (HELPPOOR) to answer the question.

Q13: It seems reasonable to assume that the more one works, the greater the income. Test this assumption by analyzing the relationship between

hours worked per week (HRS) and income (INCOME).

Q14: Use the General Social Survey of 2008 to conduct a regression analysis of income (INCOME) using the following dependent variables:

Age (AGE)

Years of education (EDUC)

Hours of work per week (HRS)

Spouse's hours of work (SPHRS)

Occupation prestige score (PRESTG80)

Number of children (CHILDS)

Number of family members earning money

(EARNRS)

Years with current employer (CUREMPYR)

a. Test the model's validity

b. Test each of the slope coefficients

c. Interpret the coefficients.