 # 11 Fuel Consumption (p. 170) Part 1

(a) **Fit a multiple linear regression of per capita fuel consumption in gallons (FUELCON) on the tax per gallon of gasoline in cents (GASTAX) and the average household income in dollars (INCOME).**

(b) **Interpret the fitted regression equation in the context of the problem.**

(c) **Test H_0: $\beta_1 = \beta_2 = 0$. State your conclusion in the context of the problem (using α= .05).**

 # 11 Fuel Consumption (p. 170) Part 2

(a) **Suppose a multiple linear regression of per capita fuel consumption in gallons (FUELCON) on the tax per gallon of gasoline in cents (GASTAX) and the average household income in dollars (INCOME) is fitted. Would it be significant to add two more predictor variables, the ratio of licensed drivers to private and commercial motor vehicles registered (DRIVERS) and the number of miles of federally funded highways (HWYMILES), to the regression model? State your hypotheses.**

(b) **What practical implications can you make based on the result obtained in part (a).**

(c) **Suppose a multiple linear regression of per capita fuel consumption in gallons (FUELCON) on the tax per gallon of gasoline in cents (GASTAX), the average household income in dollars (INCOME), and the ratio of licensed drivers to private and commercial motor vehicles registered (DRIVERS) is fitted. Suppose that the values of these predictor variables stay the same for the State of Ohio next year, provide a 95% CI of the per capita fuel consumption of the state of Ohio for next year.**

 # 17 Major League Baseball (p. 173)

(a) **A multiple linear regression of the number of games won (WINS) on the average batting average (BA) and the earned run average (ERA) has been fitted. Would it be significant to add one more predictor variable, the number of home runs hit by each team (HR), to the regression model? State your hypotheses.**

(b) **What practical implications can you make based on the result obtained in part (a).**

(c) **A multiple linear regression of the number of games won (WINS) on the number of home runs hit by each team (HR), the average batting average (BA) and the earned run average (ERA) has been fitted. Suppose that these records, HR, BA and ERA, for next year stay very much the same for the Indians, provide a 95% prediction interval for the number of wins for next year for Cleveland Indians.**