

Homework 14

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1. The countries data set is from the CIA and reports Life Expectancy, Birth Rate, Real GDP per Capita and Education expenditure as a % of GDP. Find a model to predict life expectancy, or some transformation of life expectancy, from some or all of the other variables, or transformations of the other variables (interactions are possible, too). Show evidence that the Normal linear regression assumptions appear to be met. Make a 95% prediction interval for the life expectancy in a country with a birth rate of 12 births per 1000 persons in a year, GDP per capita of \$70,000, and with 4% of GDP spent on education (close to the values for the USA).
2. Suppose that the relation of family income to consumption is positive and roughly linear. Of those families in the 90th percentile of income, what proportion would you expect to be at or above the 90th percentile of consumption: (a) exactly 50%, (b) less than 50%, of (c) more than 50%? Justify your answer.