1. C.11 Yes it is greater than 0

Exercises

chapter 1, problem 1

a,ideally, we can randomly assign students to a small size of class and a large size of a class. since population of the small class is not too much, we will collect all data related with their performance. for the large class, we only randomly pick up some samples to collect their performance to run the regression analysis.

b, because a negative correlation means that large size of the class will have the lower performance of the test score. but we can not ignore other negation relationship. such as, the students apply into the honor school which is usually for students who have a better performance and the income for their parents.

c, it can not be determined. because negative correlation can determine that larger class will have low performance, but it is not enough to determine does the small class lead to high performance.

Computer Exercises

Chapter 1.C2.

there are 1388 women in the sample and 212 of women report smoke during the pregnancy  average cigs smoked per day is 2.087  no because bot all of women smoke during the pregnancy  average number of cigs smoked for who is smoke 13.67. this will be more typical to measure the average number of cigs smoked per day for women during pregnancy.

the average of fatheduc is 13.19. because there are 196 numbers are NAs

the average family income and standard deviation are 32.198 and 17.963

chapter 2 C3.

$$sleep = 3586.4 - 0.151totwtk \; n = 706 R^2 = 0.103 \tag{1}$$

the intercept of this equation means that if one does not work, the amount of sleep time will be 3586.4 minutes per week.

2.if totwrk increase 2 hours, the sleep time decrease 18.12 minutes per week which is small effect.

problem

2.1 many kinds of factors many contained in U. such as: age of the mother, marriage of the mother, household income or personal income and religion.

Yes. religion and income will be correlated with education.

no I will not look at the ceteris paribus effect.  other effects are not in mentioned in the model