Homework #1 Problems from Wooldridge

Wooldridge Problem 1.2

A justification for job training programs is that they improve worker productivity. Suppose that you are asked to evaluate whether more job training makes workers more productive. However, rather than having data on individual workers, you have access to data on manufacturing firms in Ohio. In particular, for each firm, you have information on hours of job training per worker (*training*) and number of nondefective items produced per worker hour (*output*).

(i) Carefully state the ceteris paribus experiment underlying this policy question.
(ii) Does it seem likely that a firm's decision to train its workers will be independent of worker characteristics?
(iii) Name a factor other than worker characteristics that can affect worker productivity.
(iv) If you find a positive correlation between *output* and *training*, would you have convincingly established that job training makes workers more productive?

Wooldridge Problem 2.4

The data set BWGHT.RAW contains data on births to women in the United States. Two variables of interest are the dependent variable, infant birth weight in ounces (*bwght*), and an explanatory variable, average number of cigarettes the mother smoked per day during pregnancy (*cigs*). The following simple regression was estimated using data on n=1388 births:

predicted bwght = 119.77 - 0.514 cigs

(i) What is the predicted birth weight when *cigs=0*? What about when *cigs=20* (one pack per day)? Comment on the difference.
(ii) Does this simple regression necessarily capture a causal relationship between the child's birth weight and the mother's smoking habits? Explain.
(iii) To predict a birth weight of 125 ounces, what would *cigs* have to be? Comment.
(iv) The proportion of women in the sample who do not smoke while pregnant is about 0.85. Does this help reconcile your finding from part (iii)?

Wooldridge Computer Exercise C1.2

Use the data in BWGHT.RAW (BWGHT.DTA) to answer this question. (Additional questions are given on the assignment sheet.)

(i) How many women are in the sample, and how many report smoking during pregnancy?
(ii) What is the average number of cigarettes smoked per day? Is the average a good measure of the "typical" woman in this case? Explain.
(iii) Among women who smoked during pregnancy, what is the average number of cigarettes smoked per day? How does this compare with your answer from (ii), and why?
(iv) Find the average of *fatheduc* in the sample. Why are only 1,192 observations used to compute this average?
(v) Report the average family income and its standard deviation in dollars.