

Practice Problems: Week 1

1. Use the following earnings equation from a regression of the hourly wage in dollars (WAGE) on years of experience (EXPER) and years of education (EDUC) to answer questions A-E.

$$\text{WAGE} = 3.0 + 0.14 \times \text{EXPER} + 0.47 \times \text{EDUC}$$

(0.5) (0.1) (0.03)

where the numbers in parentheses are the standard errors.

A. The equation above predicts that an additional year of experience leads to (explain):

B. Using the "traditional" margin of error, the constant term suggests that an individual with no education or experience would be expected to earn between ____ and ____ dollars (explain):

C. Which coefficients are significantly different from zero? Explain.

D. The t-statistic for the coefficient on education is (explain):

E. If the magnitude of a coefficient from a regression was -3.5, how small would the standard error have to be for the this coefficient to statistically different from zero? Explain.

2. Suppose Madison Haley had 16 hours in the day to work or leisure. She earns \$5 an hour and has \$15 per day in nonlabor income.

A. Draw her labor-leisure constraint.

B. Suppose Madison maximizes her utility by working 8 hours a day (i.e. $h=8$). Solve for the amount of leisure (L) consumed and the amount of income earned. Depict these equilibrium value in your graph in (A).