ECO375H1F: Applied Econometrics I
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Graded Problem Set #1

Submission details: All work should be performed in one R Notebook file. Your answers should appear as comments, R commands and the corresponding output. Submit the "Preview" version of the file in nb.html or pdf format through Quercus by the due date.

Consider the model

$$ln(wage) = \beta_0 + \beta_1 educ + \beta_2 exper + \beta_3 IQ + \beta_4 age + u,$$

where *wage* is monthly earnings, *educ* is years of education, *exper* is years of work experience, *IQ* is IQ score, and *age* is age in years. The data is provided in file *wage2.txt*.

1. Find the average wage, education, work experience, and IQ in the sample.

2. What is the sample standard deviation of IQ?

3. How many individuals in the sample have exactly 12 years of education?

4. What is the maximum level of education anyone has in the sample?

5. Run the regression equation and provide the output.

6. What is the estimated percentage increase in wage if education is increased by one year, holding the other factors constant?

7. What is the estimated percentage increase in wage if education is increased by one year and experience is decreased by one year, holding the other factors constant?

8. Your friend has 12 years of education, 10 years of work experience, an IQ of 100, and is 28 years old. Find his/her predicted $ln(wage)$.

9. What percentage of the variation in $ln(wage)$ is explained by the four covariates?

10. Test the null hypothesis that education and experience has no effect on $ln(wage)$, using a 5% significance level.