

**Economics 381, Fall 2017**

**Problem Set 6 – Limited Dependent Variables**

**Due Date: November 9**

**Instructions:** Complete the problem set answers in the spaces given. Keep track of your Stata commands, print them out, and **staple** your Stata commands to this sheet.

**Name (printed):**

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- Q1. Download and use the `jobtrain.dta` file available on Canvas. Use the command `desc` to look through the variables and their descriptions. Which variables are of storage type `int`, i.e. integers?
- Q2. What does the `unem78` variable measure?
- Q3. Perform an OLS regression of `unem78` on age, education, and whether the person received job training or not. What is the coefficient on the `train` variable?
- Q4. In terms of probabilities, interpret the marginal effect of the `train` variable.
- Q5. Perform a probit regression of unemployed in '78 on age, education, and whether the person received job training or not. What is the  $z$ -statistic on the `train` variable?
- Q6. Suppose you to wanted to do this analysis again, but instead of assuming the predicted values are restricted by a standard Normal distribution function, you assumed they were restricted to a logistic

distribution function. What command would you use to implement this type of maximum likelihood regression?

Q7. Calculate the **average marginal effects** from this previous regression. What is the coefficient on the marginal effect of job training?

Q8. In one sentence, interpret this marginal effect.

Q9. Now you want to calculate the **marginal effects at the mean**. What command would you use to do this?

Q10. In one sentence, interpret this marginal effect.