**Homework Mod 3**

This assignment covers material from CORE’S The Economy Units 4, 5, and 6.

I will randomly select one question from the Empirical Analysis (30 points) and two questions from Economic Models and Problem Solving (35 points each).

# **Empirical Analysis**

**If you are in a group using R, please submit your reproducible code as a text file with the assignment.**

Create 3 graphs with the series listed in each question below (1 graph for each question: each graph will contain multiple series that should be clearly distinguishable). Use the graph to answer the respective question.

1. Create a graph which plots the unemployment rates for men and women between January 1948 and today. Use the following series for Jan 1948-present: unemployment rate for men (LNS14000001) and for women (LNS14000002)
	1. Between January 1948 and June 1980, whose unemployment rate was most frequently higher: men's or women's?
	2. Between December 1983 and today, whose unemployment rate was most frequently higher: men's or women's?
2. Create a graph which plots the unemployment rates for persons with different levels of educational attainment between January 1992 and today. Use the following series: college graduates (LNS14027662), high school graduates (LNS14027660), less than high school diploma (LNS14027659)
	1. Rank the levels of educational attainment from lowest to highest unemployment rate.
	2. What type of correlation between the level of educational attainment and the likelihood of being unemployed can you observe in the data?
3. Create a graph which plots the unemployment rates for civilian population by race or ethnic origin between March 1973 and today. Use the following series: Black or African American (LNS14000006), Hispanic or Latino (LNS14000009), and White (LNS14000003)
	1. Rank the racial or ethnic origins groups from lowest to highest unemployment rate.
	2. Compare the civilian unemployment rate of Blacks or African Americans to the civilian unemployment rate of Whites in June 2009 (the end of the “Great Recession) and today. Is the ratio relatively higher or lower today?

# **Economic Models and Problem Solving**

**Unit 4**

1. Many people consider political advertising (campaign advertisements) to be a classic example of a prisoners’ dilemma.
	1. Using examples from a recent political campaign with which you are familiar, explain whether this is the case.
	2. Write down an example payoff matrix for this case.

Marking guidance. A good answer should:

* describe why political advertising is a prisoner’s dilemma
* include a payoff matrix as presented in the reding or lecture (this does not need to be numerical)
* use a real-life political campaign to explain

**Unit 5**

1. Angela’s income is the amount she produces minus the land rent she pays to Bruno.
	1. Using Figure 5.7a, suppose Angela works 11 hours. Would her income (after paying land rent) be greater or less than when she works 8 hours? Suppose instead, she works 6 hours, how would her income compare with when she works 8 hours?
	2. Explain in your own words why she will choose to work 8 hours

**Unit 6**

1. As in all economic models, our simplified representation of Maria’s employment rent has deliberately omitted some aspects of the problem that might be important. For example, we have assumed that:
	1. Maria finds a job with the same pay after her spell of unemployment.
	2. She does not experience any psychological or social costs from being unemployed.

Redraw Figure 6.2 to show how relaxing each of these assumptions would alter the employment rent. Specifically, assume:

* 1. Maria can only find a job with the lower pay of $6 per hour after her spell of unemployment.
	2. She experiences a psychological cost of being unemployed of $1 per hour. When unemployed, she gains $2 per hour because there is no longer the disutility of working so the net gain is $1.

Marking guidance. A good answer will:

* discuss how relaxing each of these assumptions will affect Maria’s costs and benefits of working
* draw a graph for each case using Figure 6.2 as the base
1. Would any of the following affect Maria’s best response curve or the firm’s isocost lines for effort in Figure 6.6? If so, explain how.
	1. The government decides to increase childcare subsidies for working parents but not for those unemployed. Assume Maria has a child and is eligible for the subsidy.
	2. Demand for the firm’s output rises as celebrities endorse the good.
	3. Improved technology makes Maria’s job easier.

Marking guidance. A good answer will:

* recognize that the reservation wage depends on the provision of childcare and other outside opportunities (Note the importance of the assumption that the childcare subsidy is only for working parents. If it were general, it would not shift the best response function because there would be no change in her cost of childcare, whether she was in work relative or unemployed. Therefore, there would be no change in her reservation option. The work-dependent subsidy makes the cost of job loss higher because her employment rent is higher).
* draw the relevant graphs