SIMON FRASER UNIVERSITY
Department of Economics

Econ 305 | Prof. Kasa
Intermediate Macroeconomic Theory | Fall 2015

PROBLEM SET 1
(Due October 1)

The first four questions are True, False, or Uncertain. Briefly explain your answers. No credit without explanation. (5 points each).

1. Making it harder for firms to fire workers will reduce unemployment.
2. Childcare subsidies increase GDP.
3. A backward bending labor supply curve indicates that the substitution effect dominates the income effect.
4. The unemployment rate can change even without any change in the number of unemployed individuals.
5. (30 points). Suppose household preferences are described by the utility function

$$U(C, \ell) = C - \frac{1}{2}C^2 - \frac{1}{2}(\alpha - \ell)^2$$

where C stands for consumption of market goods and ℓ stands for leisure.

(a) Assuming the market (real) wage is w and the total amount of time available is 1, derive expressions for the household's consumption and labor supply decisions as a function of w and α. (For simplicity, assume the household has no nonmarket income). Does the income effect ever dominate the substitution effect?

(b) Now suppose output, Y, is produced by competitive firms with technology

$$Y = z \cdot N$$

where N denotes labor inputs, and z is an index of productivity. Derive an expression of the firm's labor demand, as a function of w and z.

(c) Using your answers to parts (a) and (b), derive the market-clearing wage rate and employment level. How does the equilibrium wage change when z increases? How does the equilibrium wage change when α increases? Use a Labor Supply/Labor Demand graph to illustrate these changes.