Problem Set 2
Due at the start of class, Monday, September 20, 2004

Please put your TA’s name on your answer sheet.

1. Short answer
   (a) Suppose a country produces 100 tons of wheat of which it eats 75 and exports 25. It also imports and consumes 20 tons of wheat. What is the country’s saving rate?
   (b) Abel and Bernanke, page 108, Analytical Problem 6.
   (c) The course packet article “Labours Lost” discusses France’s policy of restricting workers to work no more than 35 hours a week. Using the model of the consumption-leisure tradeoff presented in lecture, describe (with a graph) how such a law would effect the worker’s budget constraint. Would such a policy make the worker better off or worse off (or neither)? Is our simple model of the labor market missing something about the real world that the French government understands?


4. A Taxing Problem
   Consider an agent, Eli, who likes a consumption good (denoted by $C$) and leisure (denoted by $l$). Eli’s utility function is $U(C, l)$ which implies downward sloping, convex indifference curves. Eli’s time constraint is
   \[ N^s + l = h, \]
   and Eli’s resource constraint is
   \[ (1 + \tau)C = wN^s, \]
   where $N^s$ is the number of hours Eli works, $h$ is the number of hours Eli has in a day to allocate between work and leisure, and $w$ is the real wage rate. In this case $\tau$ is a proportional tax on Eli’s consumption (i.e. a sales tax).
   (a) Plot Eli’s resource constraint on a graph with leisure on the x-axis and consumption on the y-axis for two cases: $\tau = 0$, and $\tau = \bar{\tau} > 0$. In words, how does a change in $\tau$ effect the budget constraint?
   (b) What effect would an increase in the tax rate have on Eli’s optimal choices of consumption and leisure? Explain in terms of income and substitution effects.