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Microeconomics 1

Exam 23.10.2017

Please answer four (4) questions. Good luck!

1. Why does economics take as the primitive the agents' preferences and not "utilities" or "happiness"? Explain what it means that "a utility function represents preferences".
2. Let there be two goods 1 and 2 with prices p_1 and p_2 , and a consumer with monotonic, strictly convex preferences and income w . The government can finance a budgetary deficit $g > 0$ via either taxing the income, or taxing consumption of good 1. The income tax just reduces the consumable income of the agent by g so that his new budget constraint is $w - g$. The consumption tax t generates revenue $t\tilde{x}_1$, where \tilde{x} is the chosen consumption bundle under consumption tax t . Let x^{**} be the chosen consumption bundle under the income tax.
 - (a) Write down the budget constraints of the consumer under the two taxation scenarios. Establish that x^{**} and \tilde{x} belong to their corresponding budget sets.
 - (b) Argue that the consumer prefers the income tax by showing that the consumer could choose \tilde{x} also under the income tax. Draw a picture! (not necessary but maybe helpful)
3. Let the firm's production function be of (Cobb Douglas) form $f(x_1, x_2) = x_1 x_2$. Let price of the output be p and of the inputs w_1, w_2 .
 - (a) Identify the Lagrangian associated with the cost minimizing problem.
 - (b) Compute the cost function.
 - (c) Identify the optimal production.
4. Explain the content of the First Theorem of Welfare Economics. Interpret the result. You can illustrate the argument in an Edgeworth box (no need to prove the theorem formally!).
5. Consider a monopoly choosing an output x , and facing an inverse demand function $p = 1 - x$. Let the cost function of the monopoly be $x^2/2$ so that its profit function is $(1 - x)x - x^2/2$. Compute the optimal production of the monopoly. Argue that it produces less than what is socially optimal.