

Urban Economics (ECO333) Term Test

March 16, 2016: 6:15 – 7:25 pm. Peter Tomlinson, Instructor

Instructions: on your answer book, your surname must be printed clearly on the left side of the cover page's name line (where you see "surname" under the line); your given name must be printed clearly on the right side of that line (where you see "given names" under the line — only one given name is required); the given name you use must be the same given name shown on the class registration list next to your surname. Non-programmable calculators and drawing instruments are allowed.

Answer either Question 1 or Question 2; each question is worth 100 percent. You should write "Q1" or "Q2" on the cover page to identify the question you selected.

All numerical answers should be explained briefly. If you are unable to determine a numerical answer you can briefly discuss the theory involved in the question for partial credit.

Question 1

A town has 5 residents. Information regarding the residents is provided in the table below. The town has one park, which is its public good. A = park consumption measured in acres. The town's marginal social cost of park production is $MSC = \$24 / \text{acre}$ per year. Some correct answers may not be whole numbers: if so, round to 2 decimal places as in $A = 16.67$.

Resident	Marginal Benefit Function	Value of House
Hillary	$MB_h = 40 - 0.8A$	\$400,000
Bernie	$MB_b = 25 - 0.5A$	\$200,000
Donald	$MB_d = 15 - 0.3A$	\$1,000,000
Ted	$MB_t = 15 - 0.5A$	\$400,000
John	$MB_j = 12 - 0.4A$	\$400,000

- Comment briefly on Tiebout equilibrium before noting whether this could be a Tiebout town.
- The town uses a head tax. Determine the efficient public-good consumption level and the equilibrium public-good consumption level.
- The town changes to a property tax with all exogenous variables remaining unchanged from part (b). Determine the efficient public-good consumption level and the equilibrium public-good consumption level.
- The town changes to a Lindahl benefit tax with all exogenous variables remaining unchanged from parts (b) and (c). Determine the efficient public good consumption level and the equilibrium consumption level.

Question 2

Using diagrams and the factor substitution model, compare the impact of land and capital taxes on equilibrium values of endogenous variables: land rents, building heights, factor inputs and total output produced on the fixed land supply at a given location. All functions in your diagrams should be briefly and clearly explained.