

AP/ECON 4070 3.0AF Midterm Exam Wednesday October 22 2014

time = 60 minutes

Do **all 3** questions. All questions count equally.

1. What would be the incidence of a \$4 unit tax in a perfectly competitive market in which the demand curve had the equation

$$Q^d = 56 - 3P^D$$

and the supply curve had the equation

$$Q^s = p_s - 8$$

where Q^D is the total quantity demanded of the good, Q^s is the total quantity supplied of the good, P^D is the price paid by buyers and p_s is the price received by sellers?

2. What would be the incidence of introducing a new payroll tax — a proportional tax on people’s labour income — to fund health care in Ontario, and, at the same time, of reducing the Ontario sales tax rate so as to keep total provincial government revenues constant?

3. What would be the cost to the consumer of a tax of \$1 per unit purchased of good Y , and how much revenue would the tax collect, in the following situation?

Initially, the price of good X is 1, and the price of good Y [initially, without the tax] is 1. There is no tax on good X .

The consumer’s expenditure function is

$$e(P_X, P_Y, u) = P_X u - 16 \frac{(P_X)^2}{P_Y}$$

her compensated (“Hicksian”) demand functions for the two goods are

$$X^H(P_X, P_Y, u) = u - 32 \frac{P_X}{P_Y}$$

$$Y^H(P_X, P_Y, u) = 16 \frac{(P_X)^2}{(P_Y)^2}$$

and her initial level of utility (in the absence of any taxes) is $u = 36$.