SUID: | |

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Exam 1

Spring 2013

DO NOT OPEN THIS EXAM UNTIL YOU ARE TOLD TO DO SO.

Instructions

1. Write your SUID in the upper right corner of this exam. Do NOT write your name.

2. SHOW ALL YOUR WORK. Answers without supporting work will receive little or no credit.

3. There are 72 points possible on this exam and you will have 80 minutes to complete it. *Be sure to budget your time accordingly.*

4. Do all your work on this exam. If you need extra space, write on the backs of the pages. However, if you do write an answer on the back of a page, *be sure you've noted that near the question.*

Area of a triangle: $\frac{1}{2}bh$ Area of a trapezoid: $\left(\frac{b_1 + b_2}{2}\right)h$

Part 1 (24 points)

A good is purchased by 100 type-A people. Each person has an individual willingness to pay given by WTPai below. The good is produced by two groups of sellers: X and Y. There are 20 type-X sellers and 1 type-Y seller. The willingness to accept for each type is shown below.

Individual buyer:	WTPai = 50 – Qai
Individual type-X seller:	WTAxi = (1/15)*Qxi
Individual type-Y seller:	WTAyi = (1/100)*Qyi

(a) *12 points.* Please compute: ☐ the market equilibrium price and quantity; ☐ the quantity purchased by an individual buyer; ☐ the quantity produced by an individual seller of each type. ☐ Illustrate your results with an appropriate graph. *Please note that an extra page has been provided to give you more space.*

Part 1, continued.

Extra space for part 1(a).

Part 1, continued

Now suppose the government imposes a tax of $5 on the good.

(b) *12 points.* Please compute: ☐ the new equilibrium price and quantity; ☐ the new quantity purchased by an individual buyer; ☐ the new quantity produced by a seller of each type; ☐ the total amount of revenue raised by the tax; and ☐ the amount of the total tax burden each buyer or seller bears.

Part 2 (12 points)

A good is produced by two suppliers: a domestic firm and a foreign firm. Imported products are currently subject to a $50 tariff and the market price is currently $500. A total of 1000 units are being consumed and the elasticity of demand is -1. Domestic firms are producing 600 units and are known to have a supply elasticity of 2. The supply by foreign firms is perfectly elastic at a willingness to accept of $450.

(a) *12 points*. Please determine: ☐ the new equilibrium price and total quantity if the tariff were removed; ☐ the new production by domestic and foreign firms; and ☐ all changes in CS, PS and government revenue. ☐ What is the net gain or loss from removing the tariff? ☐ Illustrate your results with an appropriate graph or graphs.

Part 3 (12 points)

A regulated health insurance company provides prescription drug coverage in two markets: one for disease X and one for disease Y. Based on what it originally expected to have to pay for each type of patient, its WTA for a policy to cover disease X was $2000 and its WTA for a policy to cover disease Y was $4000. The firm is required to break even and has been offering policies in each market at prices equal to its original WTA: that is, Px = $2000 and Py = $4000. It now has 1000 customers in the X market and 2000 in the Y market. However, medical care has changed over time. Now disease X is cheaper to treat and Y is more expensive. The firm is still charging the original prices but its true WTA is now $1200 for X and $4400 for Y. Also, the firm knows that the elasticity of demand for each policy is -0.5.

(a) *12 points*. Please determine: ☐ the firm's extra revenue or loss in each market and indicate whether it is still breaking even; ☐ the new quantity it would sell in each market if prices were adjusted to the new WTAs; ☐ the change in CS that would result in each market; and ☐ the total change in CS (both markets together) if prices were adjusted? Briefly explain ☐ who is gaining or losing from the existing situation and why.

This problem is loosely based on an issue that has arisen with Medicare Part D.

Part 4 (12 points)

Suppose a state has 1 million low-skilled workers who earn $8 per hour. There is currently no minimum wage and the market is in equilibrium. The legislature would like to impose a minimum wage but it is unwilling to have more than 25,000 workers lose their jobs as a result. The elasticity of labor demand is believed to be -0.2 and the elasticity of labor supply is 0.5.

(a) *12 points*. Please determine: ☐ the highest minimum wage consistent with the legislature's goal of limiting job *losses* to 25,000. ☐ Then determine the effect of the higher wage on the surplus received by workers.

Part 5 (12 points)

A government running a deficit needs an additional $200,000 is deciding whether to raise a tax on good X or reduce a subsidy on good Y. There is currently no tax on X, suppliers have a perfectly elastic supply curve with a WTAx = $1000, the elasticity of demand for X is -2, and 3000 units are being sold. If the government imposes the tax, it would be $100. For good Y, there is currently has a $100 subsidy. Suppliers of Y have a perfectly elastic supply curve with a WTAy = $1000. The elasticity of demand for Y is -1 and 2000 units are now being sold. You have been asked to provide advice about which policy would be better.

(a) *12 points*. Please determine: ☐ the amount of revenue that would be raised by the tax; ☐ the amount of money that would be saved by eliminating the subsidy; ☐ the DWL that would be created or reduced by each policy. ☐ Then indicate which policy is better and briefly explain why. You may assume there are no externalities from good Y.

This question is loosely based on options related to the "fiscal cliff".