Introduction to micro economics essay sample

1. (10 pts) Because a government subsidy increases the number of mutually beneficial trades, it increases social welfare.

Uncertain. A Subsidy is like an inverse tax. Consumers and producers benefit. The demand curve shifts down shifting the equilibrium, lower price for consumers and greater quantity sold for producers. Consumer surplus rises and producer surplus rises (area under the new price they receive). However the welfare is the sum of the new consumer surplus and the producer surplus, minus the government's expenses. Depending on how much the government is spending to subsidies this industry, the effect on welfare may be negative or positive.

2. (10 pts) A tax reduces welfare less than a quota because it does not prevent the market from reaching equilibrium.

False. A new Equilibrium is reached with both a tax and a quota. A tax causes the price to rise and the quantity supplied to decrease, as does a Quota. The decrease in Welfare defined as the total surplus depends on the tax and quota being compared. Both a Quota and a Tax lead to higher prices and less of the good being produced and purchased. The Dead Weight Loss for each could be the same.

3. (5 pts) A technology shift that reduces costs will cause total surplus to fall if there is a sufficiently large reduction in producer surplus

True – Total Surplus equals Consumer Surplus plus Producer surplus. If a technology shift causes producer surplus to fall then the total surplus will all as well.

4. (10 pts) if a firm lays off workers during a recession, its marginal product of labor will increase.

Uncertain.

The firm could be laying off workers as a result of decreased production resulting from the recession. This change in production corresponds to a change to a lower isoquant , Q`

On the other hand, demand for the product may be the same but the firm is trying to cut back costs. In this case the result of laying off workers will cause an increase in the marginal product (for example they may be increasing the hours remaining workers work).

Another option is an increase in capital (more machines, computers, or money) resulting in a decrease marginal cost of labor after the lay offs. More efficient machines may require fewer operators resulting in the lay off. Adding an additional worker will not increase productivity resulting in the decreased marginal product of labor.

5. (5 pts) A firm should never produce if it is making negative profits.

False – A firm should only shut down if doing so reduces or eliminates its loss. A firm should always produce unless production causes the firm to lose more than by shutting down. By shutting down the firm is losing it's fixed costs. Only shut down production if the market price is less than the minimum of the average variable cost. P < AVC.

6. (10 pts) Consider the industry of firms that offer consumers the opportunity to bungee jump from a helicopter. To enter the industry, each

firm must pay a one time certification of one million dollars to the government for safety testing and insurance. Suppose that " Springboard Enterprises" is already operating in the industry, while " Silky-Fun" is considering whether to enter. Springboard Enterprises and Slinky-Fun have the same costs.

False. The one time certification of one million is a sunk cost for " Springboard Enterprises" and therefore is not included in the firms cost calculations. It is a cost that has already been incurred and cannot be recovered. " Silky-Fun" needs to still incur the certification fee and must include it in its costs.

Problems

1. Consider once again the (all-important) Garden Gnome industry. As a reminder, industry supply is given by Q = 60P – 260 and demand is Q = 130 – 10P. Last time, you solved for equilibrium price and quantity.

(a) (5 pts) Calculate producer and consumer surplus. What is the overall social welfare in this industry?

Equilibrium price = Qs= Qd = 60p – 260 = 130 – 10p . P = $5. 57

Intercepts – Supply = $4. 33
Intercept – Demand = $13

Surplus = ½ Base * Height .

Base = Quantity Demanded = 130 – 10(5. 57) = 74. 3

Height = Yint – equilibrium price.

Producer Surplus = ½ (5. 57 – 4. 33)(74. 3) = 46. 066

Consumer Surplus = ½ (13 – 5. 57)(74. 3) = 276. 0245

Social Welfare (Total Surplus) = PS + CS = 322. 09

(b) (10 pts) The Republican Congress, eager to quell the glut of garden gnomes, imposes a quota on the market of 50 units. Calculate the new equilibrium price, and determine the welfare loss from this program.

Quantity demanded is 74. 3 but Quota is set at 50. Therefore,

Q(s) = 50 = 60p – 260 . P(s) = $5. 17

Q(d) = 50 = 130 – 10p , P(d) = $8. 00

Dead Weight Loss = area between new Equilibrium and true equilibrium. This equals the two triangles above and below the supply and demand curve.

Producer Surplus Loss = ½ (E(q) – QUOTA(q)) (E(p) – QUATA(p)) = ½ (74. 3 – 50) (5. 57 – 5. 17) = 4. 86

Consumer Surplus Loss = ½ (E(q) – QUOTA(q))(QUOTA(p) – E(p)) = ½ (74. 3 – 50)(8 – 5. 57) = 29. 52

Total Dead Weight Loss = 29. 52 + 4. 86 = 35. 38

(c) (10 pts) In the next election, the Democrats sweep the house and senate, and reverse the Republicans' draconian quota. However, some lawmakers are con- cerned that the Republicans' policies have created irreversible damage: many U. S. producers of garden gnomes are shutting down or

moving overseas. Hop- ing to reverse the damage, a junior senator from Kansas suggests that congress impose a price oor of 7 on garden gnomes. An older senator from Illinois suggests that a subsidy of $1 per gnome might work better. Who is right and how does welfare in each of these situations compare to the value you found in question 1a?

The subsidy will increase producer surplus. Consumers will still receive their demanded garden gnomes and the suppliers will be getting an extra dollar per gnome and therefore will get extra surplus. Therefore total welfare will increase.

2. An industry is composed of identical firms, each with a total cost function $C(q_i) = 2q(i)2 + 6q(i) + 18$

for qi >= 0, where qi is the output of a single firm.

(a) (5 pts) Suppose there are currently 100 firms in the industry. What is the short run supply curve of the industry?

$C(q_i)' = 4q + 6$ = Marginal Cost (MC)

Perfect Competition MC= P

Q Supplied =

q = p/4 – 1. 5

Total Supply for all firms:

Q(s) = 100(p/4 – 1. 5)

= 25P – 150

(b) (5 pts) What is the long run supply curve with free entry? How many firms will be active in the industry? (Assume a constant cost industry.)

ATC = Selling Price/Marginal Cost = C(q)/q

MC = 4q + 6 (derivative of cost function from above)

When ATC = MC then bottom of curve reached. At this point no more firms enter market.

(2qi^2 + 6q + 18) / q = 4q + 6

q = 3 , AC = 18

Three Firms

(c) (5 pts) Suppose the demand curve for the industry is QD = 660 – 20P, where P is the market price. What is the long run equilibrium price and output?

P = 18 (From Above Long Term Production Price)

Q(d) = 660 – 20(18) = 300 units

(d) (5 pts) Suppose demand shifts to QD = 840 – 20P. What happens to price, output and profits in the short run?

Demand Increases to Q(d) = 840 – 20p

Find Intersection with Q(s) =(p/4 – 1. 5)*100

840 – 20p = (p/4 – 1. 5)*100

3394 – 80p = 25p -150

p = 22

Price, Output, and Profits all go up with this new demand shift.

(e) (5 pts) What happens to price, total output, output per firm, number of firms and profits in the long run?

In the long run all costs are variable. Price becomes inelastic and more firms can enter. Prices go down because output is increased and competition.